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VOLUME 61

HISTORIC SETTLEMENT PATTERNS IN THE NUSHAGAK RIVER REGION, ALASKA

JAMES W. VANSTONE

Curator, North American Archaeology and Ethnology

FEBRUARY 25, 1971

FIELDIANA: ANTHROPOLOGY

A Continuation of the
ANTHROPOLOGICAL SERIES

of

FIELD MUSEUM OF NATURAL HISTORY

VOLUME 61



FIELD MUSEUM OF NATURAL HISTORY
CHICAGO, U.S.A.

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PUBLICATION 1120

PATRICIA M. WILLIAMS
Managing Editor, Scientific Publications

Library of Congress Catalog Card Number: 70-143857

PRINTED IN THE UNITED STATES OF AMERICA
BY FIELD MUSEUM PRESS

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Acknowledgements

The five seasons of field work on which this study is based were supported financially by various institutions. In 1964 and 1965 research funds were obtained from the Canada Council, the University of Toronto, and the National Museum of Canada. I am grateful to Drs. David J. Damas and A. D. DeBlois, both formerly of the latter institution, for their assistance and encouragement. In 1967 I received a grant (H67-0-51) from the National Foundation for the Humanities for archaeological excavations along the Nushagak River and settlement pattern data was collected as an adjunct to this work. During the summer of 1969 additional archaeological investigations were conducted and the collection of settlement pattern data completed with financial support from the Wenner-Gren Foundation for Anthropological Research.

In the field the following individuals were particularly helpful in contributing time and effort toward the assemblage of the historical and ethnographic data in this study: Mr. and Mrs. Charles Lucier and Mrs. H. P. Nicholson of Anchorage; Mr. and Mrs. C. J. Stovall, Mr. and Mrs. Alfred Andree, Mr. and Mrs. Joe McGill, Mr. John Nelson, Mr. Peter Nelson, Mr. Charles Franklin, and Mr. Elmer L. Smith of Dillingham; Mr. Paul Romie, Mr. William Hurley, Mr. Fred Hurley, Mr. William Nelson, Mr. Wasily Nikolai and Mr. Luki Aleklok of Ekwok; Mr. and Mrs. John Dull, Jr. of New Stuyahok and Mr. A. Backford of Nushagak; Mr. Ivan Ishnook, Mr. Blunka Ishnook, Mr. Charles Nelson, Mr. Antoine Johnson, and Mr. Nikolai Tungiung of New Koliganek; also Mr. and Mrs. Maurice Miller, former Bureau of Indian Affairs teachers in that village.

Air transportation which enabled me to visit sites in the Tikchik Lakes and Wood River Lakes area in 1966 was provided by Mr. Leon R. Alsworth of Port Alsworth on Lake Clark. Father Vsevolod Rochea, formerly of Dillingham, took an active interest in the research and helped me make valuable contacts with informants in that community. Dr. Donald J. Orth, United States Geological

Survey, provided me with a copy of the Fassett manuscript map that figures so prominently in the pages that follow. The text figures and maps were drawn by Miss Kathleen Kuhlman of Field Museum of Natural History.

For critical comments on an early draft of this study I am grateful to Drs. Wendell H. Oswalt, University of California, Los Angeles, and Don E. Dumond, University of Oregon. My wife, Mary Helms VanStone, read the manuscript and her useful suggestions have greatly enhanced the final presentation; it is with gratitude that I acknowledge her valuable assistance and encouragement.

Preface

The purposes of this study are threefold: 1) to describe a series of historic archaeological sites in the Nushagak River region of southwestern Alaska with reference to their geographical and chronological position; 2) to reconstruct changing settlement patterns in the area during the nineteenth and early twentieth centuries; 3) to assess the factors responsible for changing settlement patterns, and to suggest the manner in which cultural institutions are reflected in settlement configurations. The specific methodology on which this study is based will be discussed in detail in the introduction, but it is necessary at this point to say something concerning the Nushagak research program and its results up to the present time.

Field work was begun in the summer of 1964 with an archaeological survey of Nushagak Bay, the Nushagak River, and three of its major tributaries, the Wood, Nuyakuk, and lower Mulchatna rivers (figs. 1, 2). Forty-five former settlements belonging to the period of historic contact were located and many of them mapped. In addition, considerable ethnographic information was obtained from residents in the present-day villages of the area. On the basis of the survey, the Tikechik site (Dil-40), a nineteenth-century settlement at the mouth of the Tikchik River, was selected for extensive excavation during the summer of 1965. During that summer, it was also possible to obtain additional ethnographic data, primarily at the village of New Koliganek on the Nushagak just below the mouth of the Nuyakuk River.

Much of the 1966 field season was spent in the Lake Clark area north and east of the Nushagak, but toward the end of the summer it was possible to extend the archaeological survey of the Nushagak region so as to include the Tikchik Lakes and Wood River Lakes west of the river (fig. 2). In 1967 archaeological excavations were undertaken at Akulivikchuk (Dil-13) near the present-day village of Ekwok (Dil-12). It was also possible to examine for a second time many sites along the middle Nushagak and the lower Mulchatna rivers as well as on Nushagak Bay. As a result of these second visits, much new data were obtained and some new sites discovered.

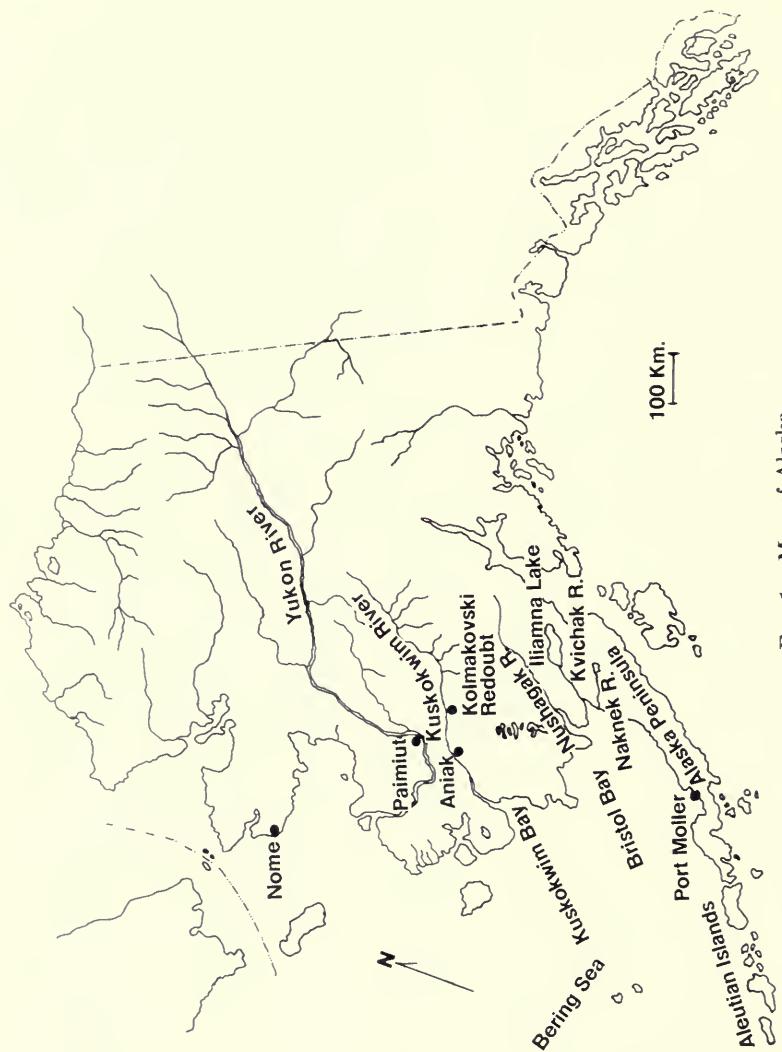


FIG. 1. Map of Alaska.

A final field season in the Nushagak River region took place during the summer of 1969. At that time test excavations were made at the Nushagak site (NB-8) on the bay opposite Dillingham and additional information concerning sites on both sides of Nushagak Bay was obtained from Eskimo informants.

As a result of these five field seasons, there is now more or less complete information on 64 historic sites in the Nushagak River region. This number seems sufficient to allow for the preparation of a detailed report on nineteenth and early twentieth century settlement patterns throughout the river system.

The present study should be considered as one of a series of publications dealing with the culture of the Nushagak River Eskimos during the historic period. Earlier reports in the series include a monograph on the ethnohistory of the region (VanStone, 1967), an annotated ethnohistorical bibliography which embodies the historical research carried out in conjunction with the field work (VanStone, 1968a), and ethnoarchaeological studies of Tikchik (VanStone, 1968b) and Akulivikchuk (VanStone, 1970). The final report in the series will deal with the village and trading post at Nushagak utilizing historical, ethnographic, and archaeological data.

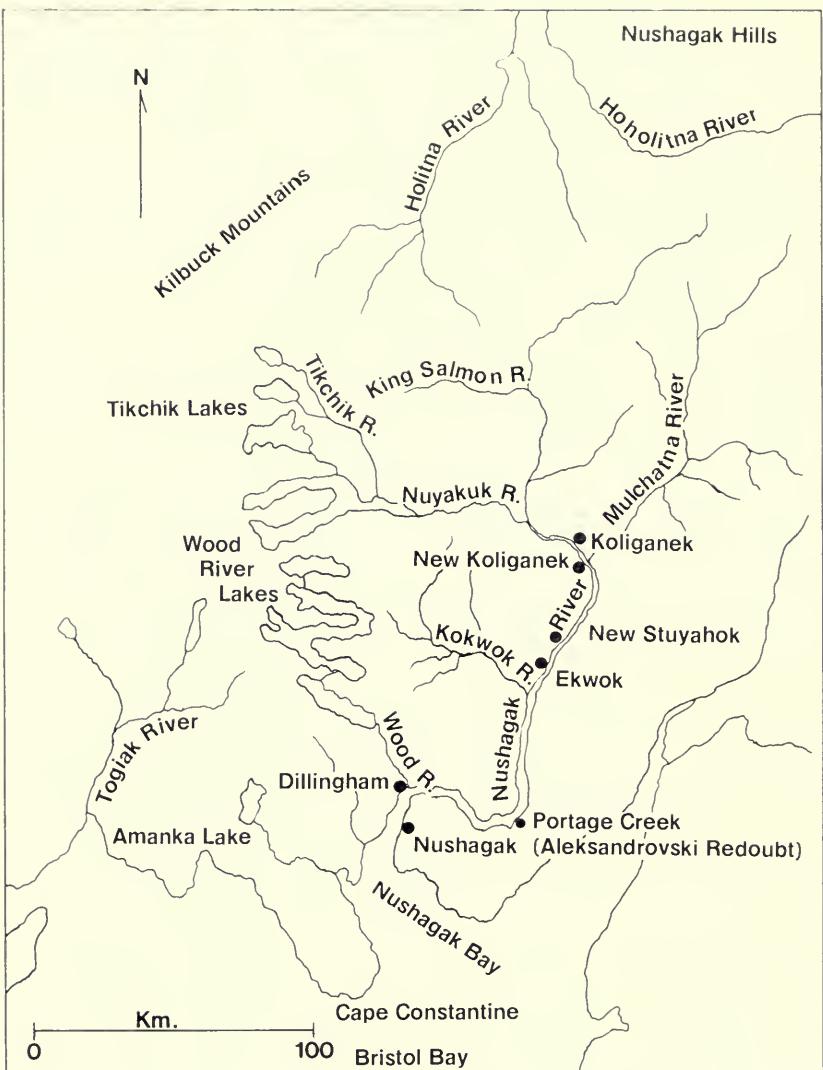


FIG. 2. Map of the Nushagak River region.

Introduction

Settlement Pattern Studies

The first archaeologist to make substantial use of the concept of settlement patterns was Gordon Willey. He has defined the concept

as the way in which man disposed himself over the landscape on which he lived. It refers to the dwellings, to their arrangement, and to the nature and disposition of other buildings pertaining to community life. These settlements reflect the natural environment, the level of technology on which the builders operated, and various institutions of social interaction and control which the culture maintained (1953, p. 1).

Chang (1958) has refined this definition by distinguishing between those spatial aspects of settlements which result from cultural ecology and those which are related to social interaction. For the first he has proposed use of the term *settlement pattern*: "the manner in which human settlements are arranged over the landscape in relation to physiographic environment," and for the second the term *community pattern*: "the manner in which the inhabitants arrange their various structures within the communities and their communities within the aggregate" (1958, p. 299).

It is clear from the above definitions that in investigating settlement patterns in the broadest sense, the units of settlements can be grouped into three categories: 1) the individual structure; 2) the layout of the individual settlement; and 3) the pattern in which individual settlements belonging to the same culture are distributed geographically. Data to be presented in the chapters that follow will focus on these categories. Primary concern will be with those factors that, during the nineteenth and early twentieth centuries, determined settlement and community patterns in the Nushagak River region.

Special attention has been paid to the determinants of settlement patterns in two recent studies by Trigger (1965, 1968). It seems worthwhile to summarize some of the major determinants he mentions, particularly those that would appear to be applicable in a hunting and gathering context. Trigger (1968, p. 53) defines settlement pattern determinants as "those classes of factors that

interact with each other to produce the spatial configurations of a social group." With reference to individual structures, he notes that they are, quite naturally, determined by the subsistence technology and environment, specifically the building skills and materials available to the builders. The size and internal arrangement of individual buildings can also reflect various social institutions but most particularly, perhaps, the social organization.

Concerning the layout of the individual settlement, Trigger notes that the size and stability of such communities is limited by the environment and the effectiveness of the subsistence technology. Everything else being equal, people will naturally choose to live in places where food and water can be obtained easily and which are safe and comfortable. Here too, however, social factors are significant and settlements frequently reflect the importance of religion, the political system, and social organization.

With reference to zonal patterning of settlements it is clear that the distribution of population within any region is going to be determined in large measure by the nature and availability of natural resources. Trigger points out, however, that as contiguous regions become more interdependent, zonal patterning is increasingly modified by economic factors that are more complex than simply those related to subsistence. This will be obvious in the Nushagak River region where trade played an increasingly important role in the establishment of new communities, the growth of some and the decline of others. The overall distribution of settlements in any area is also affected by such significant aspects of culture as political organization, warfare, and religion. In the concluding chapter some consideration will be given to the manner in which the latter operated as a determinant in the Nushagak River region. Similarly, such dynamic factors as migration and population change due to epidemics have played an important role in many areas of the world and at many time periods.

The significance and applicability of specific determinants of settlement patterns in the Nushagak River region can be more profitably discussed after achieving familiarity with the patterning of the region. Here it is desirable simply to present briefly the framework into which the data will eventually be placed and to stress that the settlement pattern, whether of communities or involving the distribution of communities, is ". . . the outcome of an adjustment which the society makes to a series of determinants

that vary in importance and in terms of the demands they make upon the society" (Trigger, 1965, p. 6).

In addition to those mentioned, there have been a large number of studies in recent years which have dealt in one way or another with the concept of settlement patterns. Those that deal with settlement and community patterns in hunting and gathering societies are not numerous, but they are useful because they frequently concern areas that resemble closely both the cultural and ecological circumstances in the Nushagak River region. In one such study Chang (1962) developed a typology that he considered applicable to circumpolar societies. In so doing he noted that if the annual cycle of subsistence activities requires movement to a number of different locales at different seasons of the year, then the total region within which the seasonal cycle is completed can be called the *annual subsistence region*. If the ecological potential of the annual subsistence region is such that it can be occupied continuously over a long period of time, then the settlements within it are called *sedentary seasonal settlements*. These can be of two types; those which remain not only within the annual subsistence region, but at a permanent locale are called *sedentary seasonal settlements with permanent bases*, and those remaining within the limits of the annual subsistence region, but moving to a different locale after several years occupancy are called *sedentary seasonal settlements with transient bases* (Chang, 1962, pp. 29-30). It will be clear in the chapters to follow that settlements of both types occur in the Nushagak River region.

Another socio-cultural classification applicable to the Nushagak area but given little attention by recent students of settlement patterns is that of Beardsley et al. (1956). The authors of this typology are particularly concerned with *community patterns* which are defined as the "organization of economic, socio-political, and ceremonial inter-relations within a community" (1956, pp. 133-134). They then proceed to formulate seven primary types of community patterning among non-herding peoples, one of which, the Central-Based Wandering type, is applicable to the area under discussion. For Beardsley and his colleagues, the Central-Based Wandering community is one "that spends part of each year wandering and the rest at a settlement or 'central base,' to which it may or may not consistently return in subsequent years" (1956, p. 138). This type of community patterning is a form of compromise between wandering and sedentary life and is possible in some areas where

wild foods are unusually abundant and can be converted to storagable surpluses. Such communities are further characterized by socio-cultural cohesion during the sedentary aspect and breaking into smaller segments or even nuclear families during the wandering phase. These smaller segments are economically self-sufficient at such times. During the sedentary phase the community functions in a manner that is comparable to more sedentary peoples, while during its wandering phase, the subsistence activities of the people parallel those of another of the primary types of community patterning, the Restricted Wanderers. That is, they take advantage of seasonally available wild foods (1956, p. 138).

Both the Chang and Beardsley classifications are clearly relevant to the present study, although a certain amount of confusion results from the fact that the authors have given different meanings to the term *community pattern*. In Chapter VII the extent to which settlement pattern data from the Nushagak River region can be interpreted in terms of the work of these students will be considered.

The Chang and Beardsley classifications, as well as the work of Trigger, Willey, and others, have relevance for ethnographic as well as archaeological data. The fact is, however, that most students of settlement patterns have operated within a framework of prehistory. This study, on the other hand, will deal with problems resulting from historic contact. Therefore, the determinants of settlement patterns will, for the most part, be specific historical circumstances and changes will be seen to have come about as a result of shifts in these circumstances. Although the bulk of this study consists of a series of descriptions of archaeological sites, it is ethnographic and especially historical data that will be vital to the interpretations. The prehistoric archaeologist who studies settlement patterns is sometimes able to infer something specific about related aspects of society concerning which there are few data in the archaeological record. The ethnohistorian, on the other hand, knowing certain ethnographic and historical facts about his area of interest, can understand some aspects of their significance by studying the manner in which they are reflected in the settlement configuration.

The Nushagak River and Its Inhabitants

The Nushagak River, the main topographic feature in the region with which this study is concerned, rises in the Nushagak

Hills at latitude 60° 35' N, longitude 156° 06' W and flows southwest 387 km. to the head of Nushagak Bay at Grassy Island. A tributary of the Nushagak, the Nuyakuk River, drains the six northern Tikchik Lakes to the west. The four lakes immediately to the south of them are drained by the Wood River which flows into Nushagak Bay. These are called the Wood River Lakes. Also included in the area under consideration are the lower reaches of the Mulchatna River, the only significant eastern tributary of the Nushagak. Not included, however, is the Nushagak above the mouth of the Nuyakuk since virtually no historic settlements have been reported in this area.

For the purposes of this study, the Nushagak River is divided into three sections; upper, middle, and lower.¹ The upper river is the area between the mouths of the Nuyakuk and Mulchatna. The middle river extends from the Mulchatna to the mouth of the Kokwok. From that point to the mouth of the Nushagak is considered to be the lower river (fig. 2). Further details concerning the geography of this extensive region and contiguous areas will be presented in the chapters that follow.

The precipitation which falls in the Nushagak River region is light when compared with the heavy rainfall areas of southeastern Alaska, but it is more than twice as great as that in the upper Yukon valley and neighboring areas of the interior. At Dillingham the mean annual rainfall is about 26 in. and the snowfall about 65 in. Summer weather in general is cool and damp, but there may be periods of warm weather similar to those which characterize interior Alaska. The summer season is somewhat longer than that of the interior, however, and it is seldom that frost occurs after June 1 or before September 1. The greatest extremes of temperature recorded at Dillingham and Nushagak from 1881 to 1919 were 80 and -54. During the summers of 1964-1967 and 1969 there were frequent dry and warm intervals, particularly in late June and early July, when the temperatures were in the high 70's.

The vegetation of the area reflects these warm, wet summers. Spruce, poplar, and birch are the most common trees with heavy growths of willows and alder bushes occurring along stream courses and in marshy depressions. The foreland facing on Nushagak Bay is, in general, timberless and open areas throughout the region are characterized by a heavy growth of tall grass.

¹ Most of this section on the Nushagak River and its inhabitants has been summarized from VanStone, 1967, pt. 1.

The larger land animals native to the Nushagak region are the moose (*Alces alces*), caribou (*Rangifer arcticus*), black bear (*Ursus americanus*), and brown bear (*Ursus arctos*), but none of these appear to be plentiful. Moose are said to be scarce in the region of the Wood River Lakes, but are common around the Tikchik Lakes and along the Nushagak River. Superficial observations made during air surveys in 1964 and 1965 indicated moose to be relatively plentiful in the broad lowland extending west of the Nushagak and along the Nuyakuk and Mulchatna rivers. Black and brown bears, particularly the latter, were also seen frequently in these areas. In Nushagak Bay several varieties of seals and beluga (*Delphinapterus leucas*) are plentiful.

The more common smaller animals are the beaver (*Castor canadensis*), mink (*Mustela vison*), lynx (*Lynx canadensis*), fox (*Vulpes fulva* and *Alopex lagopus*), porcupine (*Erethizon dorsatum*), river otter (*Lutra canadensis*), and muskrat (*Ondatra zibethica*), but only the beaver, fox, and mink are of much importance today as a source of commercial fur. Geese and ducks nest in the region and a variety of other birds may also be seen. The Lakes area affords ideal spawning grounds for the various varieties of salmon and Nushagak Bay, along with the other arms of Bristol Bay, has become the greatest red salmon fishing grounds in the world. The growth and development of this commercial fishing industry has had a profound effect on the human population of the region and will be dealt with in this study as a major settlement pattern determinant. The lakes and rivers of the area are also the habitat of Dolly Varden (*Salvelinus fontinalis*), rainbow (*Salmo gairdneri*), and lake (*Cristivomer namaycush*) trout. These, together with whitefish (*Coregonus clupeaformis*), provide important sources of food for the Eskimos.

Throughout its recorded history the Nushagak River region was occupied by Yupik speakers of the Western Eskimo language stock. This dialect was spoken in all the villages along the Alaskan coast from the vicinity of Nome south to Bristol Bay and the western end of Iliamna Lake. The inland range of Yupik speakers was to the village of Paimut on the Yukon River and the vicinity of Aniak on the Kuskokwim River (fig. 1). The cultural center of Yupik-speaking peoples was along the central Bering Sea coast and in this area the Eskimos were oriented toward a maritime economy in which the seal was the most important food animal. On the adjacent tundra caribou were hunted and fishing for salmon

was a significant seasonal activity at the mouths of rivers and in certain bays.

The Yupik penetration of the Nushagak River system took place at some unknown time during the prehistoric period when the people presumably moved inland from the Bering Sea coast. It seems certain that at the time of this inland penetration, the Eskimos already possessed a well-developed salmon fishing technology and were thus able to exploit effectively an inland environment like that along the Nushagak River and its tributaries where these fish are abundant.

The problem of accurately identifying the sub-cultural affiliation of those Eskimos in the Nushagak River region is considerably more difficult than determining linguistic affiliation. This is partly because of conflicting statements made by nineteenth-century observers, but mostly because the present-day picture has been complicated by the infiltration into the region of Eskimos from other areas. This population movement has been going on at least since the beginning of the historic period and probably longer. A consensus of the sources and informants' statements, however, make a basic distinction between the coastal Eskimo in the Nushagak Bay area and those who lived along the river itself.

Nushagak Bay was inhabited by the Aglegmiut whose territory has been noted in a previous publication as including most of the Alaska Peninsula to the southwest as far as Port Moller and to the northeast up to and including the western two-thirds of Iliamna Lake (VanStone, 1967, p. xxi). Recent research by Don E. Dumond (personal communication) in the vital statistics of the Alaska Russian Church Archives, however, suggests that the Aglegmiut may not have extended to the south as far as Ugashik, nor much beyond the Naknek River to the north.

The Nushagak River Eskimos have the ethnic name of Kiatagmiut. This sub-group of Yupik speakers occupied, at the time of historic contact, the entire Nushagak River, the lower Mulchatna River, and the area to the west possibly as far as and including the Wood River Lakes and Tikchik Lakes. Dumond's research suggests that the Kiatagmiut also occupied the upper Kvichak River and probably the lower end of Iliamna Lake.

Although the territory of the Aglegmiut had an estimated population of 1900 at the beginning of the historic period, it is probable that no more than 500 persons lived around the shores

of Nushagak Bay. The closest neighbors of the Aglegmiut were the "Peninsular Eskimos" to the south and east (Oswalt, 1967, map 2) and the Kiatagmiut to the north and northeast. The Kiatagmiut, with a population of approximately 400, shared boundaries with the Togiagamiut of the Togiak River, the Kuskowagamiut of the Kuskokwim River, the Aglegmiut, and the Tanaina Indians. Considering the diversity of ethnic boundaries in southwestern Alaska, it is not surprising that these boundaries became blurred as a result of the fur trade, epidemics of introduced European diseases, the establishment of missions, and particularly the emergence of an important commercial salmon fishery in Bristol Bay. Nevertheless, it is significant that many Eskimos resident in the area today recognize the Aglegmiut-Kiatagmiut distinction as having both a linguistic and cultural basis, even though a slight one.

Ethnohistoric sources indicate that the nineteenth-century Kiatagmiut spent the winter months in permanent villages along the river and in the spring moved to temporary camps along streams or lakes in the mountainous country of the interior. There they engaged in hunting and trapping, returning to the river in early summer to fish for salmon. In the latter part of the summer when the fish runs were nearly over the men alone moved to the interior leaving the women to watch over the full fish caches. Interior hunting and trapping continued until the first snowfall in October at which time the men would return once more to the winter villages. There are indications, however, that this pattern was modified to some extent in the direction of greater permanence of residence at villages deep in the interior away from the Nushagak River. It should also be mentioned that the residents of most villages made at least one trip a year to Nushagak Bay to visit the trading post and trade with the Aglegmiut for coastal products. Like the Kiatagmiut, the Aglegmiut of the early historic period were apparently strongly inland oriented, making lengthy spring and fall hunting and trapping trips into the interior. Although they hunted seals and exploited to a limited extent the more varied environment of their area, there are indications that sea mammal hunting was not as well developed among those residents of the settlements around the shores of Nushagak Bay as among other groups of coastal Eskimos to the north.

The Nushagak region is closely tied in with the first well-documented contact between Yupik-speaking peoples and Europeans. In 1818 a party of Russian-American Company employees

was sent from Kodiak Island to explore the territory north of Bristol Bay. During these explorations a trading post, Aleksandrovski Redoubt, was established at the mouth of the Nushagak River. It was the first Company post north of the Alaska Peninsula. Using the Redoubt as a base of operations, Ivan Filipovich Vasiliev explored the Nushagak River for the Company in 1829 and 1830. In 1830 he crossed over into the Kuskokwim drainage and descended that river to the coast. These explorations resulted in the construction of a series of trading stations at various points along the middle Kuskokwim culminating, in 1841, with the construction of Kolmakovski Redoubt opposite the mouth of the Kwik River about 16 km. above Aniak. This station remained an important trading center until abandoned by the Russian-American Company in 1866.

The explorations of Bristol Bay and the Nushagak River by Vasiliev and other Company employees, together with the founding of Aleksandrovski Redoubt, later to be called Nushagak by Anglo-Americans, were responsible for opening the interior regions of southwestern Alaska to the fur trade. Kolmakovski Redoubt continued to be supplied from Aleksandrovski until 1845, and the route up the Nushagak to its upper tributaries, across the divide and down the Holitna or Hoholitna to the Kuskokwim became heavily traveled with supplies going upriver into the Kuskokwim region and furs proceeding in the opposite direction.

In 1841 the first Russian Orthodox church north of the Alaska Peninsula was established at Aleksandrovski Redoubt and missionaries began to penetrate the Nushagak River country. However, they were seldom able to visit the villages in this vast area more than twice a year and it is likely that the residents of these villages were, at best, but marginal participants in the newly introduced faith. Nevertheless, the establishment of the church at Aleksandrovski and the construction of chapels at certain interior villages played an important role in changing settlement patterns.

For a long time after the transfer of Alaska from Russia to the United States in 1867, no attempt was made to explore the Nushagak region. At the end of the nineteenth century the inland area north of Bristol Bay remained comparatively unknown although it continued to be penetrated by missionaries, occasional trappers, and traders. The assets of the Russian-American Company were purchased by Hutchinson, Kohl & Co. of San Francisco. This firm was soon reorganized to form the Alaska Commercial Company

which continued to maintain the post at Nushagak and dominated trade in southwestern Alaska throughout the rest of the nineteenth century and well into the twentieth. The Russian Orthodox Church continued to send priests into the interior and was the major religious influence in the area as it is at the present time. The Moravian Church established a mission and school called Carmel at the village of Kanulik (NB-7) near Nushagak in 1886 but its influence was never great even though two chapels were built on the middle Nushagak River. The mission was abandoned in 1905.

Of far greater significance for the acculturation of all the peoples of the Nushagak River region than either Christianity or the fur trade was the commercial salmon fishing industry that began to develop in Bristol Bay during the 1880's. The earliest fishing in Nushagak Bay by Euro-Americans was for salting purposes, but it was the invention of the canning process that provided a means by which the Alaska salmon runs could be more fully utilized. Between 1883 and 1903 ten canneries were constructed at various points on Nushagak Bay. In the beginning most of the fishing was done by Euro-Americans while a cannery work force was provided by imported Chinese laborers. Large numbers of Eskimos were attracted to Nushagak Bay during the fishing seasons, however, and gradually some were able to obtain employment in the canneries in spite of considerable prejudice against them and their abilities as workers. Nevertheless, it was not until after World War II that Eskimos participated fully in the industry. The commercial fishery was responsible for bringing about major seasonal fluctuations of population which brought Eskimos from even the remotest villages to the area and into direct contact with many different races and nationalities.

Methodology

Methodologically, the research on which this study is based involved three techniques: 1) archaeological survey; 2) ethnography; and 3) historical investigations. Of these perhaps the most important, and certainly the most difficult, was the archaeological survey. As noted in the preface, a total of 64 sites are reported on in the following pages. Nearly all of these were visited either by boat or, for sites in the more remote areas, by aircraft. Nine, specifically noted in the individual site descriptions, were seen only from the air and five were not seen at all, but only reported to me

by informants, there being no opportunity to either visit or observe them.

All the sites along the river, its tributaries, and Nushagak Bay conformed to the same general pattern. The river sites were, in all but a few cases, located directly along the present riverbank and all, again with one or two exceptions, were easily visible as cleared areas covered with a thick growth of very tall grass. The individual house pits were deep, quite distinct, and thus easily identifiable. What difficulty there was in identifying and accurately counting the structures was due to the tall grass and not to the shallow indistinctness that would likely be characteristic of houses of great age. The absence of sizeable midden deposits was also characteristic. This fact was particularly easy to ascertain at the coastal sites because in most locations the bank cutting was as a result of wave and ice action.

As may be imagined, the observation and enumeration of archaeological sites over such a large, relatively remote area as the Nushagak River region was hampered at times by logistic difficulties. Such factors as the weather and the availability of transportation played a regrettably large role in determining the amount of attention that could be given to any one site in the area. Naturally enough, those village sites on the Nushagak River itself were most accessible and nearly all of them were visited at least twice. On the other hand, sites in the lakes area could be reached only by plane and visits to these were of very short duration. More detailed information concerning difficulties encountered during the survey and the differential attention given to specific sites will be found in the chapters dealing with the various sub-divisions of the Nushagak River region. It is sufficient to note here that the length of time spent at each site, except for those where extensive excavations were undertaken, varied from an entire day to less than 15 minutes.

The task of discovering and collecting information concerning historic settlements was made much easier by the willingness of Eskimos and white long-time residents of the area to provide the names and locations of sites known to them as well as, in some cases, considerable supplementary information concerning such important data as span of occupation and reasons for abandonment. At the time the field research was begun in the summer of 1964 there were four villages on the Nushagak River; Ekwok in the middle river region about 70 km. northeast of Dillingham, New

Stuyahok in the same general area, New Koliganek near the mouth of the Nuyakuk River, and Portage Creek, established in 1963, on the lower river about 50 km. upstream from Dillingham (fig. 2). In the case of Ekwok and New Koliganek, many residents are descendants of Eskimos who, during the late nineteenth and early twentieth centuries, either lived in the present villages or in abandoned settlements nearby. Thus residents of New Koliganek could be counted upon to provide information about settlements on the upper Nushagak and Nuyakuk rivers as well as on some sites in the Lakes area to the west. Residents of Ekwok were particularly knowledgeable concerning sites along the heavily populated middle river.

A sizeable number of the older inhabitants of New Stuyahok had lived on the lower Mulchatna River during their youth and thus provided valuable information concerning movements of people in that now totally abandoned area. Most families in the new village of Portage Creek are from New Koliganek and Dillingham. Residents of Dillingham, the cosmopolitan commercial center at the head of Nushagak Bay, were helpful in locating sites in that area. Many of the older coastal Eskimos living in Dillingham had never been more than a few kilometers up the Nushagak River but were familiar with the Wood River and those lakes which drain into it.

Although a large number of Eskimos from all villages of the area were helpful, the most profitable interviews were with a group of about 10 elderly men and women whose memories were remarkably accurate for the years between about 1900 and 1930, a period of intensive change in the area. Some of these informants exhibited considerable historical interest and provided valuable information that had obviously been passed on to them in their youth by older relatives. This kind of information was frequently obtained in response to the mention of settlement names which I had learned from my studies of historical sources. These names apparently served to activate the informants' memories as did some names which they were shown on United States Geological Survey quadrangle maps of the area.

The historical source materials utilized in this study were not only valuable in providing significant information about past settlements in the area, but also gave me a certain expertise that was useful in a variety of field situations. Elderly informants were intrigued and flattered by my knowledge of the past and, as noted above, their memories were successfully jogged to very real ad-

vantage. As a result of historical studies made prior to the field work, therefore, it was fairly easy to establish a role as an interested and informed student of Eskimo culture who desired to add to his knowledge on selected topics about which he already knew enough to ask intelligent questions and pursue promising lines of inquiry. Subjects of interest to me could be discussed on a level that did not bore the informants and, most important of all, those who could not help were interested enough to suggest the names of those who could.

With reference to the historical sources themselves, both published and archival, little need be said at this point as all are listed in the bibliography of this study and also, with annotations, in a previously published bibliographic study of the Nushagak region (VanStone, 1968a). There is, however, one important source utilized for the names and locations of settlements that requires additional explanation. That is a manuscript map of the Nushagak River, its tributaries and Nushagak Bay drawn in 1910 by Henry Clifford Fassett of the United States Bureau of Fisheries. Fassett visited Nushagak Bay and presumably compiled the information on which his map is based while serving on the United States Fish Commission steamer *Albatross* in 1900-1901 (Orth, 1967, p. 13). The original map apparently came into the possession of the United States Geological Survey and was used by them in the 1920's. Since then, however, it has either been lost or possibly returned to unknown owners. A tracing of the original map was made in 1911 by "J.H.R." and a blueprint copy is now in the library of the U.S.G.S. in Washington, D.C. In the opinion of U.S.G.S. personnel, the 1911 tracing is an accurate copy of the original.

In the chapters to follow the procedure will be to describe the various archaeological sites of the historic period as determined during the surveys mentioned in the preface. Evidence will be presented concerning the length of occupancy and the population of these settlements. Whenever possible an attempt will be made to relate a given site to those around it. Where populations cannot be determined directly from references in historical sources, an estimate will be used based on information in the eleventh federal census. This important source contains a table which gives the population and number of dwellings in villages of the Nushagak census district (Porter, 1893, p. 164). From this list of settlements occupied in 1890, only some of which can be identified with certainty, eight from the Nushagak River and Nushagak Bay have

been selected and the figures added and divided to give the average number of residents per house.

The villages listed below were chosen for the following reasons: 1) they can be readily identified; 2) all are in the region encompassed by this study; 3) all can definitely be said to have been occupied primarily by Eskimos and, at the time the census material was collected, were subject to a minimum of influences that would have strongly affected the population.

<i>village</i>	<i>population</i>	<i>houses</i>
Agivavik	30	2
Akakhpuk (Akokpak)	9	1
Akgulurigiglak (Akulivikchuk)	61	5
Kakwok (Kokwok)	45	3
Kanakanak	53	5
Kanulik	54	7
Nushagak	268	25
Yekuk (Ekuk)	65	6
Total	585	54

It will be noted that these figures yield an average of a little more than 10 persons per house. This figure may be on the low side but, in the absence of more definite information, it will serve for the purpose of estimating population where no direct evidence is available.

In conclusion it is necessary to say something concerning the site designation system used in this study, a system which utilizes the 1:250,000 U.S.G.S. topographic quadrangle as an areal base equivalent to the county in other states (Hadleigh-West, 1967, pp. 107-108). Under this system quadrangle names are abbreviated and joined with the prefix "49" to form a trinomial that is similar to the system employed by the Smithsonian Institution. The area encompassed by this study involves four quadrangle maps: Nushagak Bay (NB), Dillingham (Dil), Naknek (Nak), and Taylor Mountains (Tay). Since "49" is the prefix for all of Alaska, it is eliminated from the site designations here in order to avoid repetition. Thus the total designation will include one of the abbreviations listed above together with a number. In the chapters that follow the sites will be described according to convenient and logical subdivisions of the total region. Since a subdivision may be included on more than one quadrangle map, the sites will not be designated in a continuous numerical order. The names of settlements, when they are known, will be included along with the appropriate abbreviations and numbers. Parentheses around a name is an indication of uncertainty concerning the attribution.

Chapter 1

Village Sites on the Nuyakuk and Upper Nushagak Rivers

INTRODUCTION

In this chapter those archaeological sites on the Nuyakuk River and on the Nushagak above the present-day village of Ekwok will be discussed (fig. 3). Those sites between Ekwok and the mouth of the river will be considered in the following chapter.

The earliest maps of the Nushagak River region show the Nushagak and its major western tributary, the Nuyakuk, with the latter flowing out of Tikchik Lake to the west. These maps indicate, however, that at least as late as 1850 and perhaps later, the Nushagak and Nuyakuk were believed to be one river (VanStone, 1967, p. 12). The Nushagak north of the mouth of the Nuyakuk was referred to as the "Ilgajak" or "Ilgayak" River (VanStone, 1959, p. 38; Zagoskin, 1967, map opp. p. 358). This nomenclature appears to have arisen not only because of a mistake in distinguishing between a tributary and the main river, but also because of local names given the Nushagak by Eskimos. According to informants living along the river today, the upriver people referred to the Nushagak as the Ilgayak, a place name that has no meaning, while the lower river and Nushagak Bay Eskimos called the river Tahlekuk which means "elbow," a reference to the shape of its lower reaches. Thus it seems likely that the early explorers followed the Eskimo terminology for the river above the mouth of the Nuyakuk while naming everything below that point, including the Nuyakuk, Nushagak, a word which, at the present time, has no meaning to local people.

The Nuyakuk River heads at Tikchik Lake and flows in a southeasterly direction 58 km. before joining the Nushagak. A beautiful stream, the Nuyakuk is clear and deep with a moderate current and high banks on both sides. Just below Tikchik Lake is a short stretch of fast water and about 5 km. below the lake is a small waterfall. A third stretch of fast water occurs about 10 km.

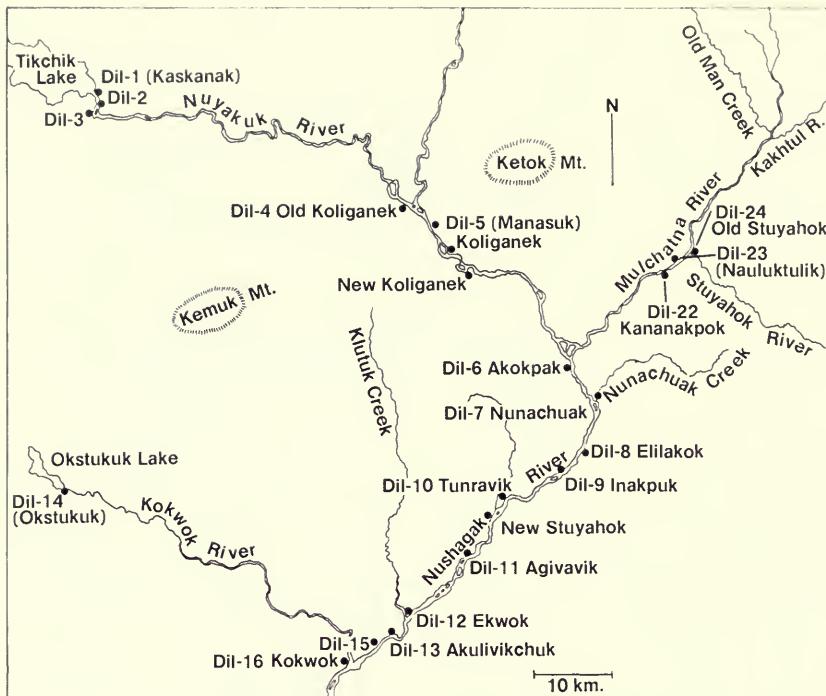


FIG. 3. Map of the Nuyakuk, lower Mulchatna, and upper Nushagak rivers.

below the lake. Near its confluence with the Nushagak the Nuyakuk meanders considerably and there are many gravel bars and sloughs. With few exceptions, the country close to the river exhibits little relief and the banks are well wooded with spruce, poplars, alders, and willows. This timber, however, does not extend back from the riverbanks to any great extent.

The Nushagak River above Ekwok is more or less confined to one channel, although there are many sloughs, islands, and gravel bars. The river is navigable for small boats well north of the mouth of the Nuyakuk, although it is extremely braided above that point. The right bank from Ekwok to a point approximately 16 km. above the mouth of the Mulchatna River is bordered by a steep bluff that ranges from 15 to 65 m. above the level of the river. This bluff is the eastern edge of a great undulating plain composed of gravel, sand, and clay that forms the topography of the vast stretch of country between the Nushagak River and the Tikchik Mountains. This plain is, for the most part, covered with moss, grass, and brush,

but along both banks of the river in the area under consideration there is a strip of timber that continues upstream into the Nushagak Hills. This strip, which grows thinner above the mouth of the Mulchatna River and again above the mouth of the Nuyakuk, consists mainly of spruce, poplar, and cottonwood with some birch in the better drained areas along the right bank. An important landmark in this area, located in the plain between the river and mountains, is Kemuk Mountain, a group of rounded hills rising to an elevation of approximately 600 m.

The left bank of the Nushagak from Ekwok to a point opposite the mouth of the Nuyakuk is much lower than the right bank and rises no more than 2-7 m. above the water level. The first well-defined bluffs on this side of the river occur about 6 km. above the mouth of the Mulchatna. About 8 km. east of the confluence of the Nushagak and Nuyakuk rivers, a low, rounded mountain rises approximately 535 m. above the surrounding plain. This prominent landmark, known as Ketok Mountain, marks the southern end of the divide that separates the drainage basins of the Mulchatna and upper Nushagak rivers. The word *ketok* means "can't pass," a reference to the fact that the mountain is visible from a great distance to travellers moving up the Nushagak who never seem to be able to reach or pass it.

SITE DESCRIPTIONS

Tay-1 (Ingrik)

Two elderly informants at New Koliganek described this village as having been located at the mouth of a small creek which flows into the Nushagak slightly less than 8 km. below the mouth of the King Salmon River and on the opposite bank. The survey, however, was not extended into this area. One informant stated that the settlement consisted of five or six houses, but the other mentioned only two. Both agreed, however, that this was the only site on the Nushagak above the mouth of the Nuyakuk.

On the Fassett manuscript map of 1910 there is a "large winter village" indicated as being located inland from the left bank of the Nushagak well north of the mouth of the Nuyakuk. Presumably this could be Ingrik even though the above-mentioned informants indicated that the site was on the river bank. It should also be noted that other informants questioned concerning this settlement knew nothing about it and did not recognize the name.

No information could be obtained concerning the period of occupancy, although if Ingrik is Fassett's "large winter village," it presumably was occupied at the time he collected the data for his map in 1901-1902. The name means "mountain."

Dil-1 Kaskanak (59° 56'N, 158° 12'W)

Located at the point where the Nuyakuk River flows out of Tikchik Lake, this site is shown on the Dillingham quadrangle of the U.S.G.S. Alaska Reconnaissance Topographic Series of maps (fig. 3). The name was obtained by the U.S.G.S. in 1932 and published for the first time by the geologist John B. Mertie (1938, pl. 1). Although this location was observed only from the air during surveys in 1964, there was no sign of semi-subterranean house structures. Informants noted that there had been a reindeer camp at this location in the early 1920's, but they knew nothing about a village or fish camp. The place must have been an important portage as there are rapids right at the headwaters of the Nuyakuk. A well-used trail around them can be seen clearly from the air.

Dil-2, 3 (Kaskanak)

These two sites are both situated on the Nuyakuk River near Tikchik Lake. Dil-2 is located about 1½ km. below the lake where the river makes a sharp bend to the south. Dil-3 is approximately 8 km. from the lake at a point where the river makes a sharp turn east. Both sites, which were observed only from the air, are on small spits formed at the mouths of creeks flowing into the main river. Both are known locally as Kaskanak, a fact that created some confusion in discussions of this general area with informants.

The banks are low in the general vicinity of these sites, each of which consists of three small houses with tunnels facing the river. An informant who was 49 years old in 1965 was born at Dil-2 in 1916. He lived there seasonally with his father, his father's brother, and their families until 1928 or 1929. According to this informant both Dil-2 and Dil-3 were primarily fish camps occupied only during the summer months. The river is shallow and narrow in this area and presumably fish could be taken more easily than at other locations. It should be noted that the name Kaskanak as applied to these three sites near the headwaters of the Nuyakuk is frequently confused with a much larger former settlement of the same name on the upper Kvichak River. References to Kaskanak in



FIG. 4. Dil-4 Old Koliganek.

historic sources appear without exception to refer to the site on the Kvichak.

Dil-4 Old Koliganek

This site is called Old Koliganek to distinguish it from its two successors, Koliganek on the left bank of the Nushagak approximately 8 km. downstream and New Koliganek on the opposite bank about 3 km. below Koliganek. The Old Koliganek site is located on the right bank of the Nuyakuk River just above its mouth. In the vicinity of the site the riverbank is low, but it begins to rise near the village. Vegetation near the site is extremely sparse (fig. 4). A few spruce and willows occur along the bank and there are scrub willows and alders in the lower areas. Back from the bank, however, the trees rapidly give way to tundra vegetation. Although the site is opposite a low, grassy island, the channel around one side of this island is choked with growth and the resultant slough has practically no current.

The Old Koliganek site is situated on two levels which rise from a grassy, flat area at the riverbank. On the first, about 2 m. above the river, are the remains of at least three structures, one of which is a cabin. Other cabin outlines may have been obscured by the tall

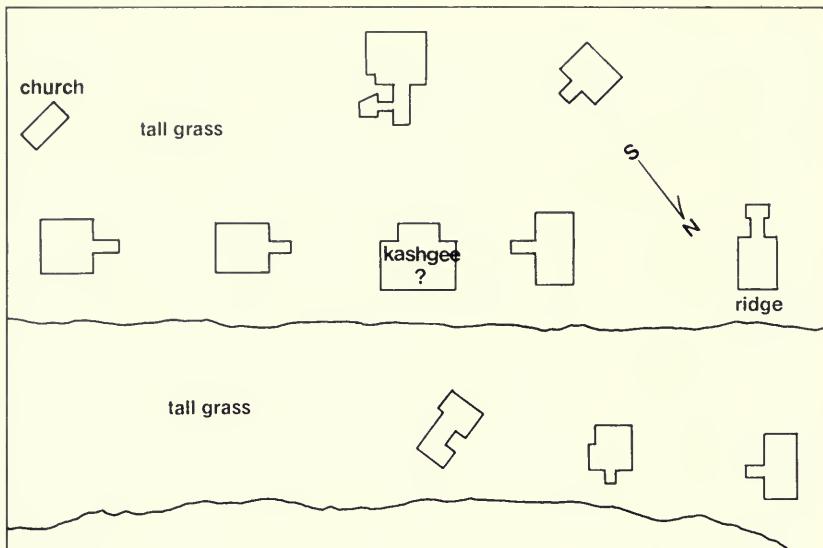


FIG. 5. Sketch map of Dil-4 Old Koliganek. Not to scale.

grass. The second level is approximately 20 m. higher than the preceding one and here were located seven structures in two rows, the largest of which was probably a *kashgee*, or ceremonial house (fig. 5). The fact that the tunnels of these structures do not consistently face in any one direction should be noted. A grove of willows has grown up at the southwest end of the site on the highest bank. Here there is a small cemetery and the rectangular foundations of a church. This would appear to be the only part of the site where trees have encroached.

An elderly informant who was born at the Old Koliganek site in the late 1870's recalled nine occupied houses and a single *kashgee* during his childhood. He also noted that the name of the settlement means "one on top of the other," an apparent reference to the two prominent levels on which the structures were built.

The Old Koliganek site is first mentioned in the vital statistics of the Nushagak Church in 1878 and there is some indication that the village was visited by a priest in that year (Alaska Russian Church Archives, accession 12,766, vital statistics, Nushagak 1842-1931).¹ In Koliganek census data collected by the Bureau of Indian

¹ To avoid lengthy repetitions, this reference will not be given again. It should be understood that all references to vital statistics of the Nushagak church have been taken from this source.

Affairs teacher in 1962, the oldest resident is listed as having been born in the old village in 1871; this is the earliest birth date obtained for the site. An early population listing of 30 is given for the settlement by Captain G. W. Bailey of the United States Revenue Marine who obtained his information from church records at Nushagak in October, 1879 (Bailey, 1880, pp. 26-27). Father Vasilii Shishkin, a Russian Orthodox priest from Nushagak, visited the village in January, 1882 but he gives no population figures (DRHA, vol. 1, p. 144).² However, the tenth federal census, data for which was collected about the same time, lists 91 inhabitants (Petroff, 1884, p. 17) and in 1898 there were 114 (Elliott, 1900, p. 740).

Old Koliganek is mentioned consistently in the vital statistics until 1930 and in 1923 a Bureau of Fisheries party visited the settlement and found only three families in residence (Bower, 1926, pp. 108-110). In 1931 the anthropologist Aleš Hrdlička ascended the Nushagak as far as Old Koliganek while collecting skeletal material for the United States National Museum. He noted that the three houses closest to the riverbank were occupied, but he encountered only a single family; the small church was still standing (Hrdlička, 1944, pp. 361-362).

Informants at New Koliganek maintained that the Old Koliganek site had been abandoned about 1940 at which time the people moved to Koliganek. It in turn was abandoned in 1964 when the inhabitants moved again, this time about 3 km. south to New Koliganek on the right bank of the river. The reason given for the abandonment of Old Koliganek was that firewood was difficult to obtain. It would appear that at the time of the move to Koliganek, no more than three families were living in the old village. It is likely, however, that at its height, perhaps around the turn of the century, the settlement had more than 100 residents. Old Koliganek occupied a strategic point at the confluence of two rivers. In addition to being a good grayling fishing place in the fall, a fact mentioned by several informants, it was conveniently located for access to caribou country to the north and to good trapping areas in the immediate vicinity. In conclusion, then, it can be noted that the span of occupation at Old Koliganek extended from before 1870, but perhaps not much before, until about 1940.

² This is a reference to "Documents Relative to the History of Alaska," 15 typewritten volumes, copies of which are located in the University of Alaska Library and the Library of Congress. These volumes, the first four of which contain most of the Russian materials, were compiled as part of the Alaska History Research Project (1936-1938) of the University of Alaska.



FIG. 6. Dil-6 Akokpak.

Dil-5 (Manasuk)

Elderly informants at New Koliganek recalled that at one time there had been a sizeable village about half way between Old Koliganek and Koliganek on the left bank of the Nushagak. It was called Manasuk and has now been completely cut away by the river. Most of the inhabitants died in the influenza and measles epidemic of 1899-1900 and the few survivors moved away. This village is not mentioned in any of the historical sources consulted in the preparation of this study.

Dil-6 Akokpak (59° 40'N, 157° 07'W)

This small site is located on the right bank of the river slightly below the mouth of the Mulchatna. The settlement is shown on the Dillingham quadrangle of the U.S.G.S. Alaska Reconnaissance Topographic Series, but its actual location is about $1\frac{1}{2}$ km. south of the point indicated on this map. The site is situated in a deep depression between two hills and there is a grassy slope on both sides of a small creek that runs, in a north-south direction, into the Nushagak River. There are no alders along this creek, but some have grown up along the bank of the river in front of the site and almost obscure it from the water (fig. 6). Informants say that the name Akokpak means "big slough." There is no slough at this

point, but perhaps the reference is to the many sloughs which make up the mouth of the nearby Mulchatna River.

There were three structures on the east slope of the site and on the west side are the remains of a small, recently occupied cabin.

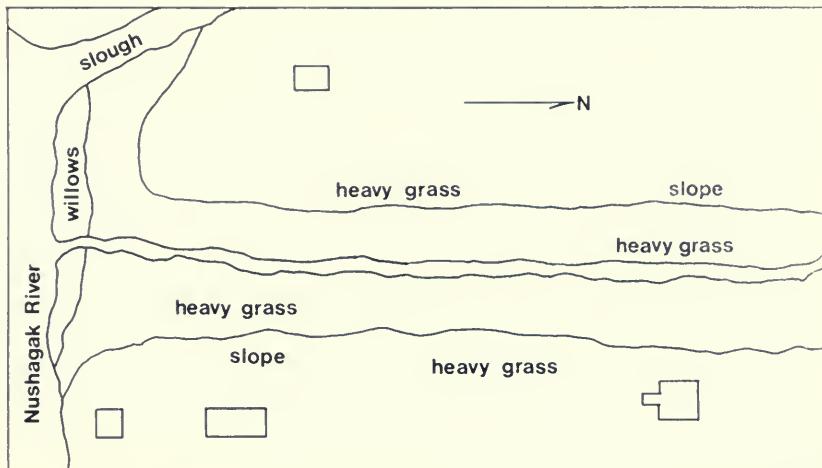


FIG. 7. Sketch map of Dil-6 Akokpuk. Not to scale.

A number of foundation logs are visible and sections of oil drums and the remains of a cast iron stove are lying about. Only the structure at the extreme north end of the site on the east slope can be said to approximate a traditional Eskimo house. The other two on this side of the creek appear to be the remains of cabins (fig. 7). In addition to the dwellings, there are numerous pits scattered about the site which could not be identified and projecting poles which may be the remains of fish drying racks.

The first reference to Akokpuk in the sources is to a visit made by Alfred B. Schanz on February 5, 1891 while on his expedition to Lake Clark. He does not mention the population and gives no description of the settlement (Schanz, 1891, no. 1882, p. 156). A village called "Akakhpuk" is listed in the eleventh federal census as having a population of nine in 1890 consisting of two families living in a single house (Porter, 1893, pp. 5, 164). Since Schanz was a census enumerator for the Nushagak census district, these sources presumably refer to a single visit. In the summer of 1923 a Bureau of Fisheries party stopped at the village at which time there were three families in residence (Bower, 1926, pp. 108-110).

The first and only reference in the vital statistics of the Nushagak church is in 1929. Hrdlička (1944, pp. 358-359) mentions a site in the area and Akokpak fits his vague description, although he refers to it as being above the confluence of the Mulchatna and the Nushagak. The site was abandoned, probably temporarily, at the time of his visit in the summer of 1931. John B. Mertie and a U.S.G.S. party visited the community in the same summer, found 20 people living there, and noted that the village contained a church (Mertie, 1938, pp. 24-26). Informants at New Koliganek, however, denied that there had ever been a church or chapel in this settlement.

Informants at Ekwok in 1964 said that two families abandoned Akokpak about 1940, but New Koliganek informants maintained that one old man lived there until 1955. The site was considered to be a poor place for a village because it was impossible to see well in either direction, and the wind would whistle down the little ravine in winter. However, there was good fishing in the fall and several informants spoke of the site as having been a fish camp. It would appear, therefore, that Akokpak was occupied from about 1890 until 1940 and perhaps longer, but it is doubtful if the population ever consisted of more than three or four families, or about 30 people. Probably Old Koliganek absorbed the residents at the time they moved, although some may have gone to Nunachuak.

Dil-7 Nunachuak (59° 38'N, 157° 04'W)

The Nunachuak, or New Village, site is located at the mouth of a wide, slough-like creek (Nunachuak Creek) on the left bank of the Nushagak approximately $9\frac{1}{2}$ km. below Akokpak. At the present time it appears as a low, flat, cleared area surrounded by a heavy growth of alders (fig. 8). The entire occupation area is no more than 2 m. above the water level and the river itself is very shallow at this point, making it difficult for boats to approach. This would be particularly true with regard to the large commercial fishing boats used by the Nushagak Eskimos today and may have been a factor in the abandonment of the site. A projecting bank of Nunachuak Creek prevents a clear view upriver from the site and the view downriver is limited by the lack of elevation. The area of occupation is about 50 by 25 m.

Nunachuak is obviously a very recent site and is shown on the Dillingham quadrangle. There are no house pits that would indicate the presence of traditional Eskimo semi-subterranean houses. Two dilapidated cabins, one elevated cache and two fish racks are



FIG. 8. Dil-7 Nunachuak.

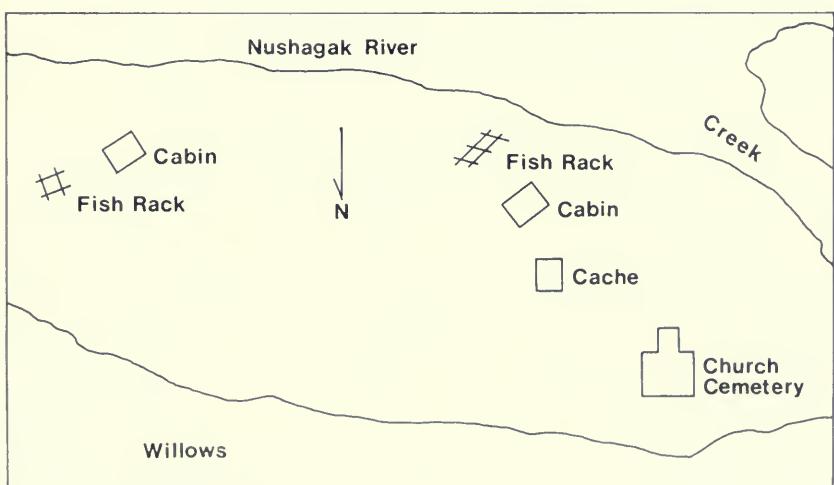


FIG. 9. Sketch map of Dil-7 Nunachuak. Not to scale.



FIG. 10. Church at Nunachuak.

still standing (fig. 9). At the northwest corner of the site stands a ruined church surrounded by a cemetery (fig. 10). Presumably there were at one time many more cabins, but it is difficult to determine their location in the high grass. It is likely that some were dismantled and the logs moved to new building sites.

Informants at Ekwok maintained that Nunachuak did not come into existence much before 1920 and it is not mentioned in any census until 1930 when it had a population of 32 (*Fifteenth Census of the United States: 1930*, pub. 1932, p. 1222). Mertie (1938, pp. 24-26) stopped at the settlement the following year and noted a population of 25. The community is not mentioned in the vital statistics of the Nushagak church until 1929 and 1930. Although the above information seems conclusive, the fact remains that Bureau of Indian Affairs census reports at New Stuyahok contain the name of an individual who is supposed to have been born at Nunachuak in 1892. Of course the location could have served as a camping spot or fish camp long before the village was established, and also the census material may be incorrect. The most recent birth date obtainable for the site, 1955, also comes from Bureau of Indian Affairs records. It appears unlikely that there were more than five or six families living in the village at any one time. In

the 1930's three different men maintained small trading posts in the settlement and these may have attracted an increased temporary population at various times.

It is considered probable that Nunachuak was populated in part by former residents of the Mulchatna River and that those who eventually abandoned the site moved to New Stuyahok. Informants mentioned that floods occurred frequently in the spring and occasionally during the winter thaws. The final abandonment is said to have taken place for this reason.

Dil-8 Elilikok (59° 33'N, 157° 07'W)

Located about $9\frac{1}{2}$ km. below Nunachuak on the same side of the river, this site, like Nunachuak, is very low, grass covered, and at the entrance of a wide, slough-like creek. The Elilikok site consists of three large house pits, a *kashgee*, and a number of sizeable pits which cannot be identified. Two of them are shown on the site map (fig. 11). The dwellings and the *kashgee* have prominent entrance chambers. Like Nunachuak, Elilikok is surrounded by a heavy growth of alders and is no more than 2 m. above the river level. No cabin remains were located nor were graves visible. The possibility of frequent flooding is certain to have been a major factor in the decision to abandon this site.

There is very little information available concerning the occupation of Elilikok, although it is shown on the Dillingham quad-

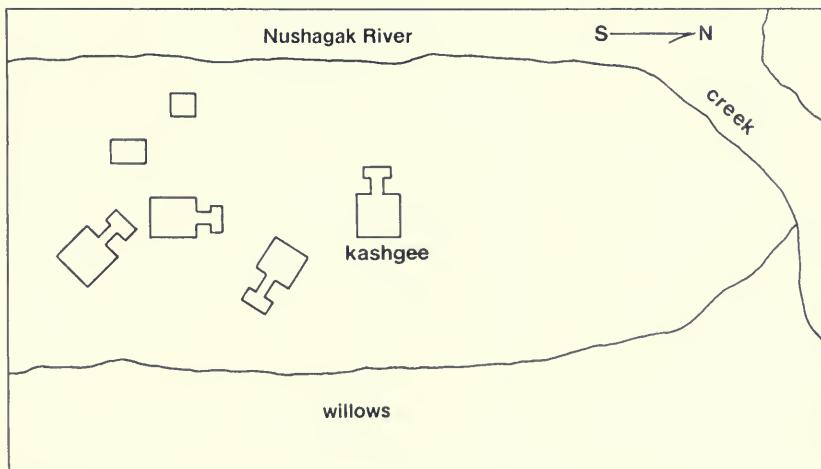


FIG. 11. Sketch map of Dil-8 Elilikok. Not to scale.

rangle. Two informants at New Koliganek recall stopping there on trips down the river to Nushagak at the turn of the century. A middle-aged Ekwok man was taken to a dance at the site when he was ten years old about 45 years ago. The site is mentioned as being deserted when a Bureau of Fisheries party passed by in the late summer of 1923. The definite impression given, however, is that the desertion was temporary (Bower, 1926, pp. 108-110). Hrdlička (1944, p. 370) examined the site on June 11, 1931 and noted that it had only recently been abandoned. In spite of what would seem to be a relatively late occupancy, there are no references to the village in any of the census material available for the present-day Nushagak villages, nor is it mentioned in the vital statistics of the Nushagak church. In any event, it is clear that the site can date no earlier than the end of the nineteenth century and was abandoned by 1930; population was probably never more than 35 to 40. An Ekwok informant thought that the inhabitants may have moved to Nunachuak, but this could not be verified.

Dil-9 Inakpuk (59° 32'N, 157° 09'W)

This site, although shown on the Dillingham quadrangle map as being located on the right bank of the river about 8 km. below Elilokak, could not be located during surveys in 1964 and 1967. This is perhaps not surprising since informants were unanimous in describing it as a small fish camp, occupied seasonally, and without standing cabins or house pits of the traditional type. It is said to have been located on what is now a very small and shallow slough. According to one informant, the name means "big bar" or "big island" and refers to a large island just below the site.

Inakpuk is shown on Fassett's map as "Pit-mik-ha-mut" and there was one family living there in 1923 (Bower, 1926, pp. 108-110). A single reference to the settlement occurs in vital statistics in the office of the Deputy Magistrate in Dillingham, a marriage license having been issued to a resident of Inakpuk in August, 1922. The name Inakpuk was obtained in 1930 from Frank H. Waskey, a long time resident of the Dillingham area, by the U.S.G.S. and was published by Mertie (1938, pl. 1). All this information would seem to indicate that the settlement was occupied during the 1920's and possibly into the 1930's, but it is doubtful if more than two families ever resided there at the same time.



FIG. 12. Dil-10 Tunravik.

Dil-10 Tunravik ($59^{\circ} 31'N$, $157^{\circ} 15'W$)

About 8 km. above New Stuyahok and $1\frac{1}{2}$ km. northeast of the mouth of Tunravik Creek on the right bank of the river is Tunravik, a site about which very little information could be obtained even though it is obviously recent and is shown on the Dillingham quadrangle map. Like other sites on the right bank, this one is located in a rather narrow ravine between two hills, through which flows a fast-moving stream. In the ravine bottom the alder growth is almost impenetrable and the stream itself is virtually invisible (fig. 12). On the south side of the creek the hill rises abruptly and there are no signs of occupation. On the north side four houses were located on a bluff, while the flat area along the creek is covered with a heavy growth of tall grass (fig. 13). West of the occupied part of the site is a flat, grass covered area with some well-defined depressions that may be the remains of cache pits. All four of the structures on the bluff were of the traditional type with their tunnels and entryrooms facing downriver. The largest structure at the front of the bluff may have been a *kashgee*.

Like the inhabitants of a number of right bank sites, residents of Tunravik chose the north side of a creek and utilized a steep, natural slope. The site commands a good view downriver and

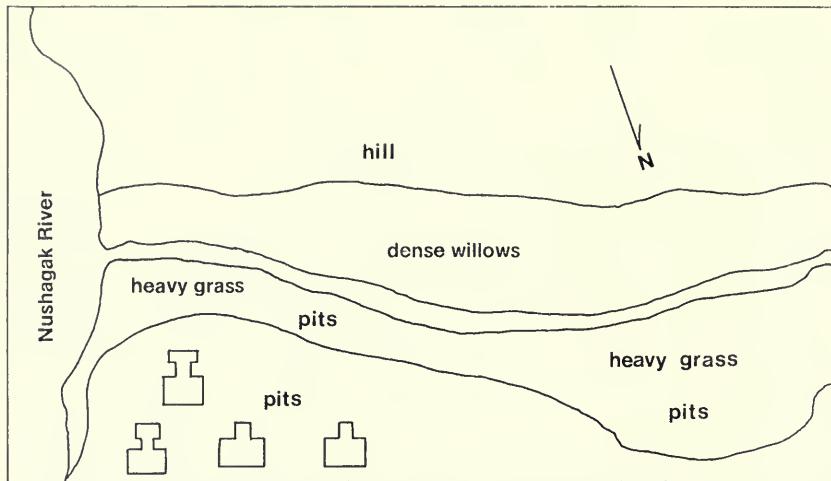


FIG. 13. Sketch map of Dil-10 Tunravik. Not to scale.

on the south side there is a trail that leads up the hill to a point from which it is possible to see a distance of 11 or 12 km. upriver.

Although there are no references to Tunravik in the sources, some information concerning the occupancy was obtained from informants. According to a man who was 50 years old in 1966, there were people living at the site when he was eight or nine. Another informant in his 70's believed that there were two occupied houses at the settlement when he was a small boy around the turn of the century and that these people eventually moved downriver to Ekwok. This information would suggest an occupancy extending from perhaps the end of the nineteenth century until about 1925. If all the dwelling units were occupied at the same time, which is by no means certain, a population of 35 or 40 is suggested.

Dil-11 Agivavik

One of the most important and well-documented sites on the Nushagak River, Agivavik is situated on the right bank about 8 km. below New Stuyahok. At this point the riverbank is high and there is a moderate growth of willows as well as a few spruce. The Agivavik site resembles Tunravik in many respects. It is located in a ravine formed by a swift moving stream, on both banks of which are thick growths of alders. On the south side of the stream there are no indications of occupation, the slope rising abruptly behind the alders. On the north side the rise is also abrupt

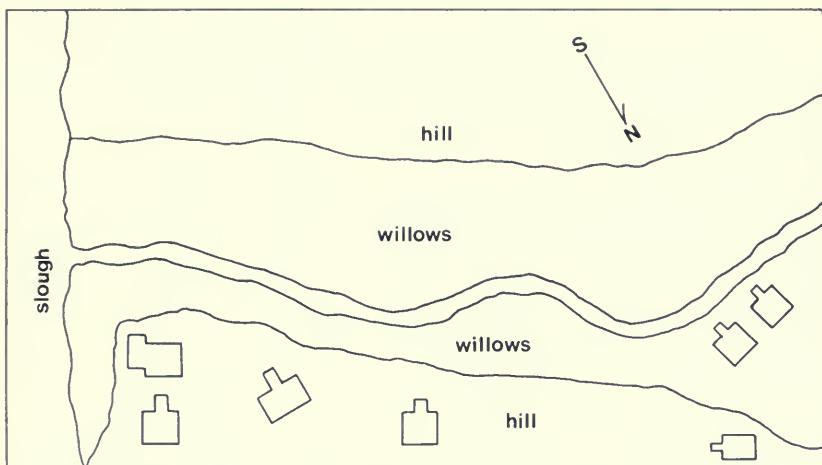


FIG. 14. Sketch map of Dil-11 Agivavik. Not to scale.

but not so steep. Four structures were located on a grass-covered ridge near the riverbank and a fifth at the extreme western end of the site. Toward the west this ridge slopes off to a flat, grass-covered area where there are two small house pits (fig. 14). All these structures approximate the traditional Eskimo type, the one at the western end of the ridge appearing to be somewhat older than those near the riverbank. The two small house pits in the flat area by the creek at the rear of the site appear to be the most recent. They could almost represent the remains of cabins, although there are shallow excavations and short entrance passages.

In addition to the structures just described, there are at least five additional house pits on the north side of the creek in the forested area well above the visible portion of the site; they do not show on the site map. These structures, which were not discovered until the area had been examined a third time, have been almost totally obscured by advancing vegetation. Spruce and cottonwood trees are growing out of them and the ground cover is predominantly moss. The tree growth and moss cover make it difficult to determine the exact number of structures in this area. It seems likely that these dwellings represent a prehistoric component which was never disturbed because more recent inhabitants confined their activities to that part of the site most accessible to the river.

The entire Agivavik site is dotted with small pits and there may also be midden deposits in the more recently occupied sections.

The inhabitants of the settlement would have enjoyed a good view downriver even though the site is protected from the main channel by several low islands. In fact, it is really on a slough and not on the river proper.

There is no shortage of source material documenting the occupation of Agivavik. It is mentioned for the first time in the vital statistics of the Nushagak church in 1863 and thereafter occurs frequently until the final reference in 1902. There is some indication that the settlement was visited by a missionary for the first time in the former year. In 1878 the village is mentioned in the missionary's journal (DRHA, vol. 1, p. 330), and in the following year it is noted in Bailey's list of communities as having a population of 47 (1880, pp. 26-27). Father Shishkin mentions a visit to Agivavik in January 1882 at which time it appears to have been one of only three occupied villages on the river (DRHA, vol. 2, p. 144). Data for the tenth federal census, collected the preceding year, lists a population of 52 but there is no indication as to how many houses were occupied (Petroff, 1884, p. 17). Ten years later in February, 1891, however, A. B. Schanz, collecting statistics for the eleventh census, noted that there was a population of 30 living at Agivavik in two houses (Schanz, 1891, no. 1882, p. 156; Porter, 1893, pp. 5, 164).

These are the extent of the references to Agivavik until Hrdlička visited the site in 1931. At that time his guide told him that the settlement had been occupied in part until "about 30 years ago" (Hrdlička, 1944, pp. 373-374). The village is shown on maps attached to the annual reports of the Governor of Alaska from 1901 to 1908, although it is located on the wrong side of the river and well above the mouth of the Nuyakuk. Fassett, on his manuscript map of 1910, shows a site in the approximate location of Agivavik, but he calls it "At-mik-ha-mut." Agivavik is mistakenly identified by Orth (1967, p. 51) as being located on the Ugashik River.

On the basis of the above information, it seems certain that Agivavik was abandoned sometime during the first decade of the present century. Concerning length of occupancy and size, it seems safe to conclude that the site was occupied back into the late prehistoric period at which time it may have been considerably larger than at any time after historic contact. After the beginning of the historic period, it is probable that the population seldom, if ever, exceeded 60.

Dil-12 Ekwok (59° 22'N, 157° 30'W)

Ekwok is situated on the right bank of the Nushagak just above the mouth of Klutuk Creek. The village name apparently occurs for the first time on Fassett's map, but a post office, established in 1935, is known as Ekwak. The settlement is frequently confused in the sources with Ekuk on Nushagak Bay. Although Ekwok is occupied today, it is mentioned here because of its age and significant relationship with other sites in the general area.

Ekwok was presumably established sometime in the late nineteenth century since census material collected by the school teacher in 1940 shows several residents who were born there in the 1890's; it had a population of 79 in 1898 (Elliott, 1900, p. 740). The village is first mentioned in the vital statistics of the Nushagak church in 1902 and during the summer of that same year a biological survey party under the direction of W. H. Osgood found it deserted. He describes the settlement as "a small collection of igloos and caches" which he surmises were temporarily occupied by people from the larger community of Kokwok about 5 km. further down the river (Osgood, 1904, p. 18).

At Ekwok today there are few indications of the old site. Modern cabins have obliterated the old house pits, most of which were apparently located on a bluff upriver from the present village (VanStone, 1967, pp. 148-150). Informants stated that many Kokwok people had moved to Ekwok, particularly in 1918-1919 as the former village was very hard hit by the influenza epidemic which struck Alaska in those years. It seems clear that Ekwok gradually came to replace Kokwok (Dil-16) and Akulivikchuk (Dil-13) as the most important population center in the middle river region. By 1923 it was already the largest village on the river (Bower, 1926, pp. 108-110).

Chapter 2

Village Sites on the Middle and Lower Nushagak River

INTRODUCTION

The left bank of the Nushagak from Ekwok to the mouth of the Iowithla River is bordered by the steep bluff referred to in the previous chapter. The right bank downstream as far as Portage Creek is low just as it is north of Ekwok. From a point approximately 12 km. below Ekwok the river is divided into two large channels of about equal size. The eastern channel is known as the Keefer Cutoff; the western is the one used by all traffic at the present time. These two channels continue in a southwesterly direction and merge about 16 km. east of Black Point. From there to Black Point the Nushagak is a moderately swift stream frequently braided with small sloughs and channels (fig. 15).

The Nushagak River estuary, which spreads from Black Point to the mouth of the Wood River and runs in a northwesterly direction, has a length of about 32 km. and an average width of 3 km. Dark gray mud flats border both sides of this estuary. On the northwest bank the lowland is higher and alder bushes fringe the shore. The flats along the southwest bank, however, rise only slightly above the level of high tide and are covered with a thick growth of marsh grass. These low flats spread to the south for a distance of approximately 3 km. but wedge out toward Black Point. Beyond the mud flats in a southerly direction toward the bay are treeless plains of gravel, sand, and clay ranging from 35 to 85 m. in elevation and dotted with small lakes.

For the purposes of this study, the mouth of the Nushagak is considered to lie just south of the Wood River mouth on a line between Dillingham and Picnic Point. The seaward region is regarded as Nushagak Bay. Only at Black Point, about 48 km. to the southeast of Dillingham, does the river begin to maintain a continuous downstream current, while the effect of the tides is present as far upstream as Portage Creek.

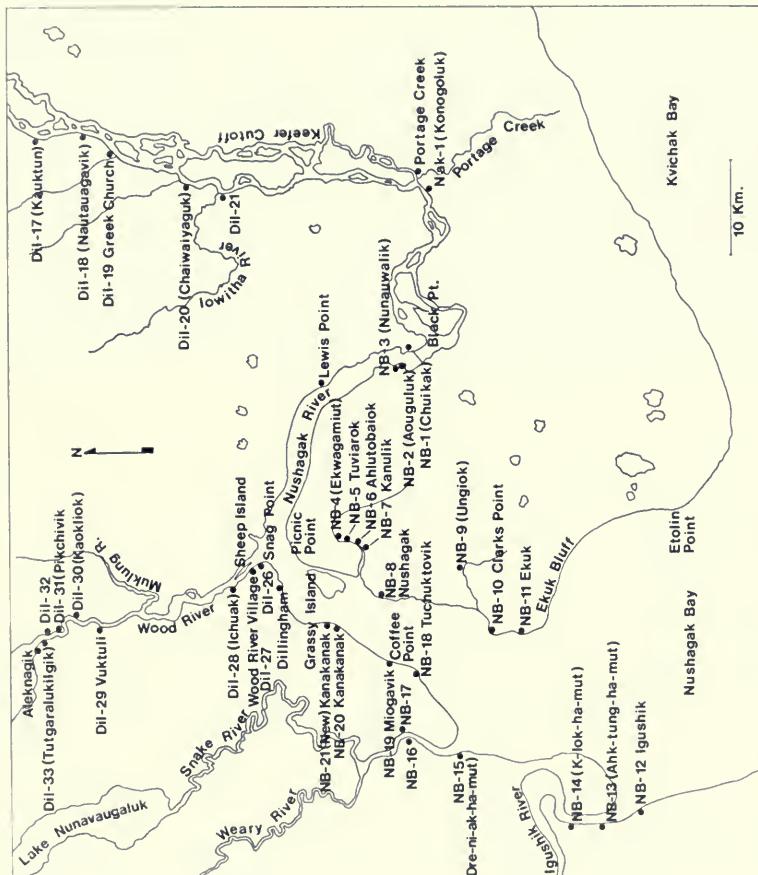


FIG. 15. Map of the middle and lower Nushagak River.



FIG. 16. Dil-13 Akulivikchuk.

SITE DESCRIPTIONS

Dil-13 Akulivikchuk

This important site, one of the largest on the river, is located on the right bank of the Nushagak approximately 5 km. below Ekwok (fig. 3). It was excavated during the summer of 1967 (VanStone, 1970). The right bank of the Nushagak in this area is low but rises again south of Akulivikchuk and is 10 to 12 m. high at this site. The formerly occupied area appears as a large, cleared, relatively flat expanse of ground approximately 150 m. long and 80 m. deep. It is covered with tall grass and divided about equally into two halves by a deep ravine that at one time contained a running stream (fig. 16). An informant suggested that the name of the settlement may have been derived from *agoonli* which means "in between," a reference to the small creek which formerly divided the site.

At the peripheries of Akulivikchuk are thick growths of small spruce and cottonwoods with the latter being more common near the riverbank to the north and south, while the former predominate along the back of the site to the west; a few willows are also growing in the ravine. Trees are not encroaching to any great extent and

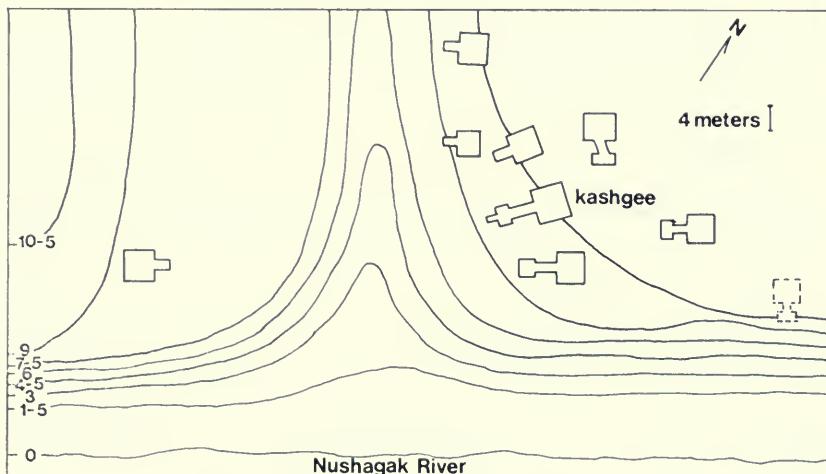


FIG. 17. Map of Dil-13 Akulivikchuk.

the cleared area of former occupation must be nearly the same size at the present time as it was when the settlement was abandoned.

To the southwest of the ravine the cleared area is somewhat smaller than to the northwest, and only a single house depression, together with a number of pits, is located on this side. The remaining seven houses, the single *kashgee*, and a large number of presumed cache pits of varying sizes were on the northern side (fig. 17). The fact that the only good view down the river is from the north side may account for this distribution. This appears to have been a major factor in the orientation as well as the location of the structures since, with two exceptions, all those on the northern side of the ravine face downstream.

In considering the natural advantages of Akulivikchuk as a place to live, it is possible to mention the high ground, the presence of fresh water running in the ravine, a good hunting and fishing location, and a favorable downriver view of as much as 3-5 km. Another factor that may have been taken into consideration by the residents was the availability of large timber for building, although there is little of that left in the area today.

Although Akulivikchuk was almost certainly one of the larger and more important settlements along the Nushagak throughout all or most of its occupation, it is mentioned infrequently in the historic sources. In 1843, a man from the village, presumably a

visitor to the mission at Aleksandrovski, is noted in the vital statistics of the church as having been baptized. Residents of the settlement continue to be listed in the statistics more or less regularly until 1899 although, as will be noted presently, the village may have been abandoned somewhat earlier.

The only definite reference to Akulivikchuk in the late nineteenth century published sources is a population listing of 72 in Petroff (1884, p. 17, map 1). In the eleventh federal census reference is made to a village called "Akguluriglak" in the Nushagak census district but it is not shown on the accompanying map. The settlement is listed as having a population of 61 including 16 families living in five houses (Porter, 1893, p. 164). If this is not a reference to Akulivikchuk, then the absence of the village from the 1890 census suggests that it may have been abandoned by that time. When questioned on the subject, informants could only say that the settlement was abandoned sometime around the turn of the century. Reference to the village in the vital statistics of the Nushagak church as late as 1899 could be misleading since it is not always clear whether the statistics refer to the place of a parishoner's birth or to his residence at the time his name appears.

The cause of the community's abandonment cannot be determined with certainty. Several informants mentioned that during one winter when many of the village children were playing in front of the settlement on the river ice, it suddenly gave way and a large number were drowned. It was said to have been after this unfortunate accident that people left Akulivikchuk. However, the emergence of other villages in the general area may also have played a role.

Hrdlička visited the Akulivikchuk site in the summer of 1931 noting on his way up the river that it was "a very large old site on right bank, largest yet" (1944, p. 357). On the return trip he was even more impressed and described the site as follows:

Reach another large old site two miles below Hurley's [Ekwok]. Extends on both sides of a now dry small stream and then along a large flowing creek. Much larger than the site [Agivavik] above Hurley's but there is evidently an older part and a later. Scores of square pits of igloos some large, many small. Collectively extend along main river and creek for at least half a mile, igloos several deep (p. 374).

It is difficult to recognize the Akulvikchuk site from this description; Hrdlička greatly overestimated its size. Also there is nothing to suggest that it was occupied for long during the prehistoric period.

A reasonable estimate of the total period of occupancy would be from approximately 1800 to 1900. It is unlikely that the population ever exceeded 100.

Dil-14 (Okstukuk) (59° 31'N, 158° 18'W)

Okstukuk Lake is at the headwaters of the Kokwok River. At the point where the river flows out of it there is a small site partly on the lakeshore and partly on the right bank of the river. The shore, generally low with a heavy growth of spruce, is about 2 m. above the water level at the site. It slopes back immediately along the riverbank and there are two small house pits situated in this low area with their tunnels facing the river. They have no entryrooms and the structures are no more than a meter above the river level. A third house pit is located on the higher part of the site which fronts on the lake. The tunnel and entryroom of this structure parallel the lakeshore and face away from the river.

Okstukuk Lake is shown as "Ok-su-kok" on the Fassett map, but the site is not indicated. Neither is it mentioned in any of the sources. An informant in his 90's living at New Koliganek said that the site had been used as a spring camping place within his lifetime. Another informant nearly as old noted that it was already abandoned when he was a small boy. All informants agreed, however, that the Okstukuk site was not a permanent settlement but a fall fishing camp for whitefish with some moose hunting. A weir was constructed and the fish dipped out of it. People always left this camp before freeze-up to return to permanent villages along the river.

Dil-15

This site is located along a small slough, now virtually dried up, about 3 km. above Kokwok. At one time this may have been an important channel of the river, but it is now necessary to walk in from the slough entrance about 150 m. to the site. The location of this former settlement was difficult to determine even when pointed out by informants and it could not be seen during air surveys in 1964. The site is known to Eskimos at Ekwok and apparently was visited by Hrdlicka (1944, p. 375) in 1931 who believed it to be prehistoric.

The slough bank is about 2 m. high at the site but willows and cottonwoods have grown all along the bank virtually obscuring a flat, shallow cleared area perhaps 100 m. long and covered with

tall grass. Willows, some birch, cottonwoods, and spruce are encroaching from all directions. The remains of six structures were tentatively identified, but none could be seen clearly and there may be more.

Informants at Ekwok believe this site to be of great age and few are willing to suggest a name for it. Two Ekwok informants referred to it as being located at the "old" mouth of the Kokwok River; the place where the Kokwok used to flow into the Nushagak. The topography of the area today, however, does not suggest that this is the case. These informants called the site Old Kokwok and said that the inhabitants had moved from there down to Kokwok. This site illustrates the difficulties involved in locating older settlements along the Nushagak unless they are situated in the same places utilized by later peoples.

Dil-16 Kokwok (59° 19'N, 157° 33'W)

Kokwok, located on the right bank of the Nushagak at the mouth of the Kokwok River, a major western tributary, is the largest abandoned village on the Nushagak, consisting of at least ten residential structures. At the point where the Kokwok joins the Nushagak the bank is flat and about 7 m. above the level of the river. This bank is cutting back at a fairly rapid rate, but there seems little danger that any part of the site will be destroyed in the near future. The formerly occupied area, which is virtually flat, is about 340 m. long but only about half that in depth. The area to the rear of the site is covered with a thick growth of willows and the surrounding country is low in all directions (fig. 18). In fact, this is one of the few areas of the Nushagak where the bank is relatively low on both sides of the river.

Seven of the 11 identified structures at Kokwok were more or less in a row at the front of the site. The cleared area in back of these structures is extensively pitted; the remains of a church and three houses are located there (fig. 19). When shown a plan of the village, informants in Dillingham and Ekwok stated definitely that the structure designated as a church was the small Moravian chapel built in 1897-1898. One source (McElwaine, 1901, p. 181) mentions that the Russian Orthodox Church had a chapel in the village but this was denied by informants. At least two of the identified structures along the riverbank were not houses of the usual Eskimo type. Both were probably cabins and the larger of the two, located next to the structure that is considered to be the



FIG. 18. Dil-16 Kokwok.

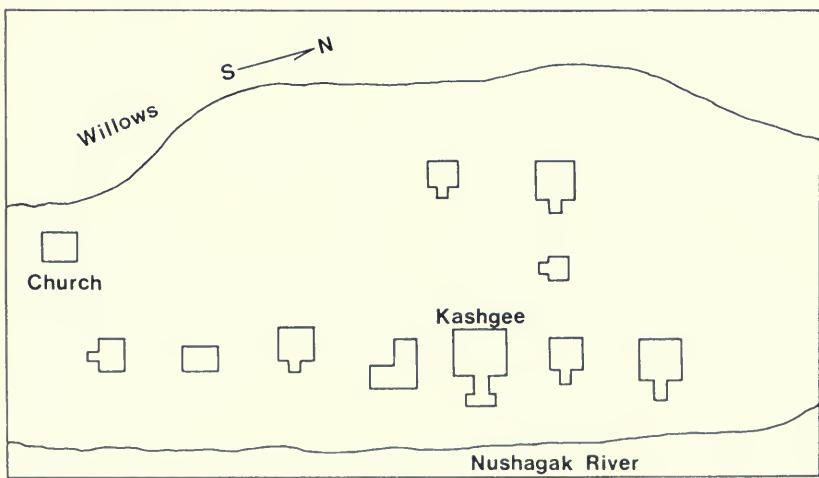


FIG. 19. Sketch map of Dil-16 Kokwok. Not to scale.

kashgee, is almost certainly the remains of a log structure photographed by a visitor to the village in 1901 (Shawhan, 1902, p. 515). It may well be that the remains of other cabins on the site were overlooked. Cabin locations are difficult to see in tall grass, particularly if the logs used in their construction have decayed or were removed at the time of abandonment. The house pits, however, are sharply defined, and the manner of their collapse can usually be noted.

Kokwok is mentioned regularly in the vital statistics of the Nushagak church between 1847 and 1910. This last date seems to precede the actual abandonment of the site by at least ten years. In 1878 Kokwok was one of two Nushagak River settlements (the other being Agivavik) visited by the Orthodox priest (DRHA, vol. 1, p. 330) and in the following year the village is listed by Bailey (1880, pp. 26-27) as having a population of 83. This figure would appear to be very much on the conservative side since in 1882 Father Shishkin noted in his diary that he had 145 communicants in the village (DRHA, vol. 2, p. 144). The tenth federal census, in which the settlement is called "Kukuak," lists a population of 104 in the same year and this would seem to have been the high point of its population (Petroff, 1884, p. 17). Within ten years the number appears to have been cut in half, although it is always necessary to keep in mind that the number of people enumerated in any of the Nushagak villages would vary greatly with the season of the year. In any event, when A. B. Schanz visited Kokwok in January of 1891 while enumerating for the eleventh census, he noted only two occupied houses and the *kashgee*. The first house contained 22 people, the second 23, and an elderly widower was living in the *kashgee*. Schanz noted in particular the huge size of the *kashgee* with its side planks which were as much as 13 cm. thick, 1 m. broad, and up to 17 m. in length. Even today it is an impressive ruin (Schanz, 1891, no. 1881, pp. 138-139; Porter, 1893, pp. 5, 164).

Beginning in 1896-1897 the Moravians extended their influence to Kokwok where, as has been noted, a chapel was constructed the following year (SPG Proceedings, 1897, p. 23; 1898, p. 25).¹ By 1900 the Moravians considered Kokwok, along with Grant's Village (Dil-19) to the south, to be one of their stations on the Nushagak

¹ This is a reference to the annual *Proceedings of the Society of the United Brethren for Propagating the Gospel among the Heathen*, published by the Moravian Church at Bethlehem, Pennsylvania.

River (SPG Proceedings, 1900, p. 37). The village appears on Fassett's map as "Kok-wok-ha-mut" and a population of 106 is listed for it in 1898 (Elliott, 1900, p. 740).

In the summer of 1902 W. H. Osgood's party visited Kokwok and found only 25 people living there. However, their visit was in early September and they noted almost as many people proceeding upriver on hunting trips (Osgood, 1904, p. 18). About 1906 the village is mentioned as being the largest settlement on the river (Cobb, 1907, p. 32), but there is some doubt as to the validity of this statement. Still, it is likely that only Old Koliganek could have been larger at this date providing Kokwok had remained approximately the same size as noted in the eleventh census.

Informants at Ekwok agreed that Kokwok was in a decided decline after the influenza epidemic of 1918-1919. Apparently residents were hard hit and most of the survivors moved up to Ekwok. Informants emphasize, however, that the decline began before the epidemic and one suspects that it may have begun not long after the mid-1880's. This may have been due to the fact that many Kokwok people moved to the bay after the beginning of the commercial fishing industry, a factor that certainly influenced other river communities as well. It is probably true, too, that



FIG. 20. Dil-17 (Kauktun).

Carmel, the Moravian mission at Kanulik (NB-7), attracted some Kokwok people after the Moravians began to extend their influence up the river. There were, however, still two families living at Kokwok as late as 1923 when a Bureau of Fisheries party passed by the village (Bower, 1926, pp. 108-110). This is the final reference to Kokwok in the sources and by this time, as previously noted, Ekwok had replaced it as the largest settlement on the river.

Dil-17 (*Kauktun*)

The first site below Kokwok is on the same side of the river and about $6\frac{1}{2}$ km. from that village. It is small and occupies the slope on the north side of a small creek overgrown with alders (fig. 20). The riverbank is 5-7 m. high at this point. There is one small house pit close to the bank with the tunnel facing downriver (fig. 21). A thin growth of spruce and willows characterizes the general area.

An informant at Ekwok noted that the name of the small creek on which this site is located is Kauktun and ventured his opinion that the site might have had the same name. Other informants agreed concerning the name, but none could provide information with reference to its age. There are no references to Kauktun in the sources. A settlement called "Gun-guk-ha-mut" is shown on Fassett's map in approximately the same location as Kauktun or Dil-18. Orth (1967, p. 398) calls it "Gunguk" without giving

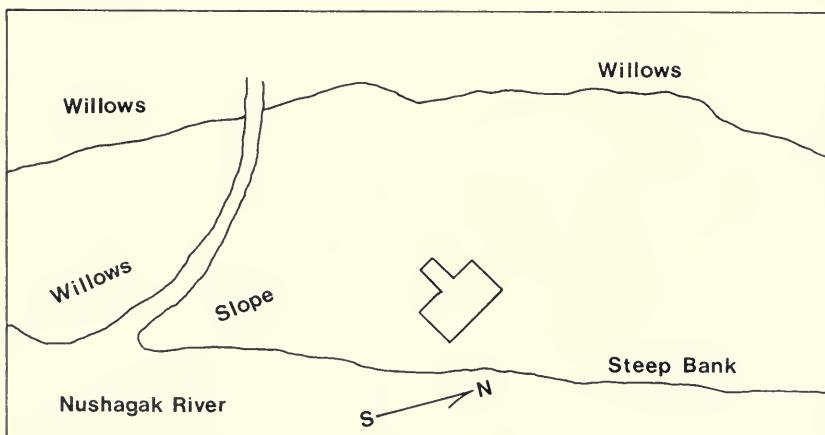


FIG. 21. Sketch map of Dil-17 (Kauktun).



FIG. 22. Dil-18 (Nautauagavik).

any additional source. He says it is "5 mi. S of mouth of the Kokwok."

Dil-18 (Nautauagavik)

This site is located approximately 8 km. below Dil-17 on the same side of the river. Being a grassy slope beside a small, dry creek, Dil-18 closely resembles other sites on the right bank. Here, as elsewhere, a draw has been formed by the creek but the cleared area is on the downriver side only, the upriver slope, and the surrounding area generally, being covered with a rather heavy growth of birch and willows (fig. 22). There are no distinct house pits in the cleared area, although one vague depression was tentatively so identified. Above the cleared area in the woods on top of the bank are two house pits, one large with an entryroom opening off the tunnel and the other small without such a room. These are shallow, poorly defined depressions which, in all probability, belong to the prehistoric period.

The name for this site was obtained from one informant in Ekwok who claimed to remember an old man who lived there more than 50 years ago. Both this settlement and the previously described Dil-17 may have been seasonally occupied fish camps.

Dil-19 Greek Church, Grant's Village, Kanack, Aivuvikulik

Although the name Greek Church is one that is always given locally to this spot, the implication being that a Russian Orthodox chapel once stood on the site, elderly informants along the river agreed that this was the location of Grant's Village and the site of a Moravian chapel. An Eskimo from an unknown village was given the name Abraham Grant by the Moravians at Carmel as their first adult communicant from upriver. He became a member of the church in April, 1896 and later in that year was sent up the Nushagak as a "helper" to preach to the upriver people. He established himself at a place which the Moravians always referred to as Grant's Village. In September of 1896 the Rev. John H. Schoechert, a missionary at Carmel, made a trip to Grant's Village and work was begun on a small chapel that was finished the following year. In January, 1897 Mr. Schoechert baptized 13 individuals at Kokwok and Grant's Village, the first recorded upriver baptisms for the Moravians (VanStone, 1967, pp. 43-44).

The Eskimo name for Grant's Village is Kanack, but later it was called Aivuvikulik, a reference to the fact that a church had been built there. The site is in a small ravine between two high banks formed by a dry stream (fig. 23). The riverbank is



FIG. 23. Dil-19 Greek Church or Grant's Village.

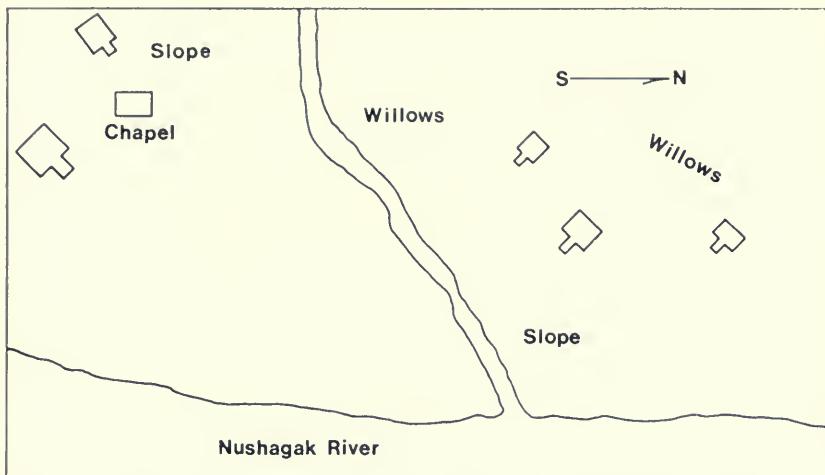


FIG. 24. Sketch map of Dil-19 Greek Church or Grant's Village. Not to scale.

generally high in this area and both sides of the creek are clear of trees and covered with tall grass. There are willows, cottonwoods, and a few birch around the site, but the vegetation is not heavy. The slope is gentle on both sides of the creek and the entire site is about 200 m. long and 100 m. deep. There were three small houses on the upriver slope with their short tunnels facing downriver. On the downriver slope are two small house pits and the remains of the chapel, a rectangular log structure about 3 m. by 4 m. Only the decaying foundation logs can be seen. The tunnel of one of the houses on this slope is still standing (fig. 24).

An elderly informant at Ekwok said that her husband had lived at Greek Church for a while in his youth about 50 years ago. Presumably the Moravian chapel was abandoned when the Moravians left the Nushagak region in 1906, if not sooner. Hrdlička (1944, p. 356) mentions the site but apparently did not land there on his trip up the river in 1931. He simply noted that it was a large, grassy patch about half an acre in size. It is unlikely that the population of this small settlement ever exceeded 50.

Dil-20 (Chaiwaiyaguk)

About 9½ km. below Greek Church on the same side of the river is a small site along the flat top of a cutting bank that is about 5 m. above the level of the river (fig. 25). A few hundred meters below this site is a small trapper's cabin built by John Nelson of Dillingham



FIG. 25. Dil-20 (Chaiwaiyaguk).

in 1926. It is still standing and the location is shown on the Dillingham quadrangle. The site itself is a flat, cleared area on the upriver side of a small creek that enters the Nushagak at this point. There is a scattering of willows and a few spruce in the vicinity, but the tree growth is generally very thin. In approximately the center of the cleared area was one house about 4 m. square with the tunnel facing downriver and no entry room. There is a particularly good view down the Nushagak from this point.

This may be the site described to me and called Chaiwaiyaguk by an elderly informant at Ekwok. She was not at all certain of its location, noting only that it was below Greek Church. She might very well have been referring to Dil-21. The people who lived at Chaiwaiyaguk, certainly not more than 10 or 15, are said to have moved up to Kokwok but the period of occupancy and abandonment could not be determined.

Dil-21

This is the site of a trapper's cabin built more than 40 years ago by Ernest Olsen of Dillingham and located about 1 km. below the mouth of the Iowithla River on the right bank of the Nushagak. A small creek enters the river at this point and there is a grass-



FIG. 26. Dil-21

covered bluff on the upriver side where the remains of the Olsen cabin are situated. A fairly heavy growth of birch and willows surround the site but the tundra comes almost to the banks of the river on the downriver side (fig. 26). In addition to the cabin, there are two house depressions in the woods on the upriver side of the creek. They are small, shallow, and appear to be of some antiquity. Their presence in this location illustrates the fact that a careful search of the timbered areas at the peripheries of many of the historic sites in the Nushagak River region may reveal the presence of earlier, prehistoric structures.

It was not possible to obtain any data from informants concerning the occupation of Dil-21. Those questioned were aware only of the presence of the trapper's cabin. Hrdlička (1944, pp. 355-356) seems to have noted both this site and the preceding one (Dil-20) in 1931 without stopping to investigate. It is perhaps significant for interpreting this general section of the Nushagak that Fassett's manuscript map shows no settlements between Kokwok and the mouth of Portage Creek.

Nak-1 (Kungviyalik, Kongogoluk, Konogoluk)

This site is located about 3 km. downriver from the mouth of Portage Creek on the left bank of the Nushagak just beyond the

point where the river makes a sharp turn and begins to flow in an east-west direction. A dry stream bed opens on the river here after running almost parallel to it for a few hundred meters. Along

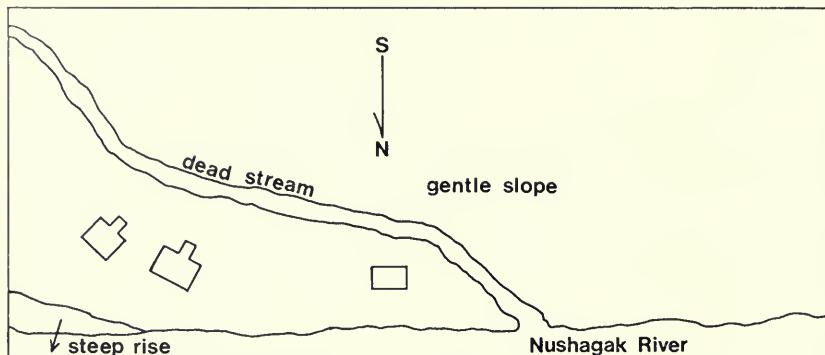


FIG. 27. Sketch map of Nak-1 (Konogoluk). Not to scale.

the north side of this creek a small slope rises gradually to a height of about 4 m., forming the bank of the main river. This bank is relatively short, perhaps 75 m. long, and then drops off sharply to the east. It rises again, however, and the site is actually located in a ravine between two hills. Along the slope on the north side of the creek are two house depressions, each about 5 m. square, with their short tunnels facing the creek (fig. 27). At the west end of the slope, well away from the house depressions, is a sizeable rectangular pit. Opposite the occupied area on the other side of the dry creek a gentle slope rises to a high bank covered with tundra vegetation and a sparse scattering of stunted spruce.

Three names for Nak-1 were obtained from informants; Kungviyalik, Kongogoluk, and Konogoluk. It is probable that the latter is closest to the actual name. There are no specific references to this site in the sources and the oldest informants along the river could not remember a time when it was occupied. On Fassett's map, data for which, it will be remembered, was collected in 1901-1902, there is a village indicated just below the mouth of Portage Creek, but it is not named. Hrdlička (1944, p. 355) noted the site in 1931 but apparently did not go ashore to investigate. Occupation might be placed in the early part of the twentieth century and it is unlikely that more than 20 individuals were ever in residence at one time.

It is worth noting that Portage Creek derives its name from the fact that it is possible to make a short portage from its headwaters and thus move easily to Kvichak Bay without being exposed to the open ocean and the long trip around Etolin Point. As an inside passage, this portage is comparable to, and an extension of, the one that allows travellers to avoid Cape Constantine when travelling from Kuskokwim Bay to Nushagak Bay. This portage is not used at the present time because most Eskimos have large commercial fishing boats that cannot travel up Portage Creek. It was important, however, as recently as 30 years ago.

NB-1 (Chuikak)

Approximately 32 km. west of Portage Creek, in the Black Point region where the river turns in a northwesterly direction, is a small site situated along the right bank on a steep bluff that rises nearly 15 m. from the water. Immediately to the east of the site the land is flat, a characteristic feature of much of the shoreline along the right bank of the Nushagak toward its mouth. It appears that at one time there may have been a creek flowing into the river just below the bluff. Toward the east there is tundra vegetation while the bluff itself is covered with very thick, high grass. Scrub willows grow toward the rear of the site.

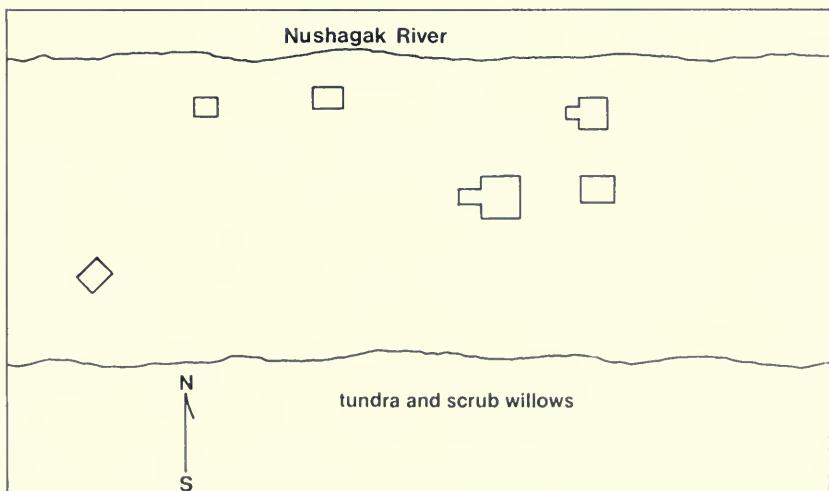


FIG. 28. Sketch map of NB-2 (Aouguluk). Not to scale.

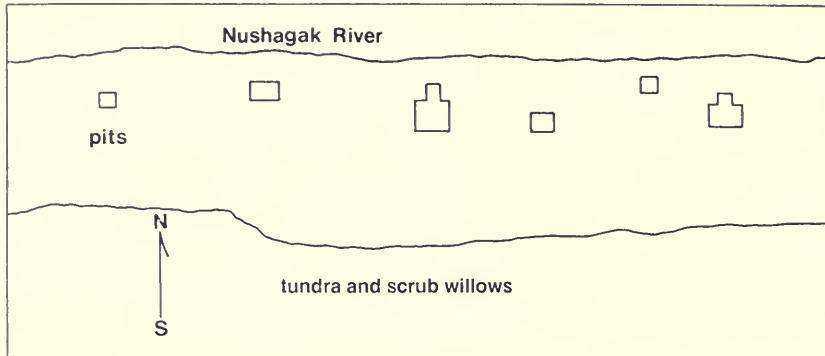


FIG. 29. Sketch map of NB-3 (Nunauwalik). Not to scale.

Because of the heavy growth of grass on the bluff, it was very difficult to determine the outlines of house structures with any degree of certainty. However, there appear to have been at least three large houses along with numerous unidentifiable pits. Informants believed the site to be old, but no definite information could be obtained. An Ekwok resident said that the settlement had been called Chuikak, or at least this name was given to the present Black Point area. The Fassett map shows a site on the right bank of the river west of Lewis Point which is designated "Nu-nah-go-luk." Although at first glance this would appear to be far to the west of NB-1, Fassett has placed Lewis Point considerably to the east of its location on modern maps.

NB-2 (Aougluk), NB-3 (Nunauwalik)

Almost directly across the river and slightly to the northwest of NB-1 are two small sites less than 500 m. apart. NB-2 has likely been a fish camp in recent years. It is very narrow, not more than 50 m. in depth, and runs along the bank of the river for a distance of perhaps 75 m. On the site are the remains of four small cabins and two larger structures that appear to at least approximate aboriginal houses (fig. 28). There are also numerous pits scattered about. The riverbank in the vicinity of NB-2 is about 8 m. high, but only a short distance to the west it slopes down to form the grassy tidal flats that characterize the country around the mouth of the river. Scrub alders grow along the bank except in the vicinity of the site and tundra vegetation is found inland. Because the bank of the river is flat in this area, NB-2 is difficult to see from a

boat. The bank is not cutting and there are sand bars which make the general area unapproachable except at high tide.

Just west of NB-2 is NB-3, a small site which resembles the former in many ways. NB-3 is about 100 m. in length and very narrow. It is right at the edge of the river bank and consists of two small house depressions together with a number of unidentified pits (fig. 29). The general environment is the same as that of NB-2.

Information concerning these two sites is scanty, as there are no references to either one in the sources. An elderly Dillingham informant considered the two to be one and said it was called Aougluk. Others agreed with the name but insisted that it applied only to NB-2. The name Nunauwalik was obtained for NB-3 from one informant. Both sites were apparently occupied early in the century and perhaps as late as 1940. They are said to have been fishing camps for residents of Nushagak Bay.

Chapter 3

Settlements On the Lower Mulchatna River

INTRODUCTION

The Mulchatna River heads at Turquoise Lake in the southern foothills of the Alaska Range northwest of Lake Clark and flows southwest 256 km. to the Nushagak River (fig. 3). From its mouth as far as the mouth of the Kakhtul River, the farthest point of investigation, the Mulchatna is a tortuous, winding stream without stable banks on either side except in occasional places where high bluffs, often some distance from the main channel, extend along the river bank for a few kilometers. The Mulchatna is timbered along its course in much the same manner as the Nushagak, and the vast, low plain of this important tributary is an undrained country covered with hundreds of small lakes.

At the present time there are three mouths to the Mulchatna which, according to local residents, are continually changing. The banks are very low in this area and at high water the shore line is extensively flooded. The heaviest timber in the Nushagak drainage basin stands in this lower part of the Mulchatna valley and the many dead trees that are seen in this area suggest that flooding is a common occurrence. The river channel also gives evidence of having changed its course many times and there are numerous sloughs which have been cut off from their contact with the river at both ends. Under such conditions, archaeological sites could be cut away in a relatively short time and this may account for the small number that were observed. Hrdlička (1944, pp. 365-66) made similar observations after his trip up the river in the summer of 1931. The name Mulchatna is said to be derived from the Russian words *molchanie* (silence) or *molchat* (keep silent), perhaps a reference to the rather desolate environment.

Definite information concerning Russian exploration of the Mulchatna is scarce. It seems certain, however, that explorers and traders in the Iliamna Lake area penetrated the upper river in the

late eighteenth century and may even have followed it to its mouth and explored part of the Nushagak (see VanStone, 1967, p. 4; Zagoskin, 1967, p. 335). In any event, it is much more likely to have been explored from this direction than from the south since the early Nushagak explorers were particularly interested in the upper reaches of that river and the route to the Kuskokwim.

In 1846 the general manager of the Russian-American Company was considering reducing Aleksandrovski from a redoubt to an *odinochka* (trail house) and subordinating it to Nikolayevski Redoubt on Cook Inlet. At that time, Ivan Veniaminov, the Russian Orthodox bishop of Alaska, instructed the missionary at Nushagak to explore the route to Iliamna Lake so that, if the mission at Aleksandrovski was closed, the priest at Nikolayevski Redoubt could visit the Nushagak River country (DRHA, vol. 1, pp. 365-366; VanStone, 1967, pp. 26-28). Although the Nushagak mission was never closed, it appears that henceforth the priest included the Mulchatna in his area of influence, for beginning in 1859, the river is mentioned in the vital statistics of the church. No names of settlements are given; simply a reference to "Mulchatna villages." These references continue into the first decade of the twentieth century, but there is some indication that beginning about 1880, one village rather than several is being mentioned.

In 1879 Bailey lists the population as being 208, all Athapaskans. This presumably represents the number of people from the river on the records of the Orthodox Church at Nushagak at that time (Bailey, 1880, pp. 26-27). The tenth federal census also speaks of villages in the plural and gives a population of 180, again emphasizing the fact that all are Athapaskans. If the people enumerated at this time were indeed Athapaskans, and there is no reason to doubt it, it would be interesting to know if any lived below the mouth of the Kakhtul River, the traditional Eskimo-Tanaina boundary.

Father Vasili Shishkin of Nushagak visited the river frequently in the 1880's and probably later. In his journals for 1881-1883 he speaks about a single Mulchatna village that was located above the mouth of the Kakhtul and he gives the definite impression that the Mulchatna below this point was unoccupied (DRHA, vol. 2, pp. 144-147). By 1890 Petroff also reports that the population of the river was very small and that these Athapaskans "pass their winters in log houses covered with earth, but lived a roving life

during the summer, erecting a temporary shelter of poles and bark wherever they chose to tarry on their hunting expeditions" (Petroff, 1891, p. 3).

All this would seem to suggest that the Eskimo penetration of the lower Mulchatna is a fairly recent occurrence, perhaps having taken place in the last 50 or 60 years. Fassett's map shows a village, presumably Eskimo, at the mouth of the Mulchatna called "Pahls-chat-nok" that would have been occupied around the turn of the century. There are no references to such a village in the sources, although there was a small trading post at the mouth of the river in 1902 (VanStone, 1967, p. 60). In any event, a village at this point in Fassett's time would have disappeared by now since, as previously noted, the river banks are particularly unstable in this area.

Since about 1940 there have been no Eskimos or Athapaskans living on the Mulchatna. The peoples referred to by Bailey, Petroff, and Shishkin were probably inhabitants of Tanaina Indian villages on the upper reaches of the river (VanStone and Townsend, 1970, pp. 21-23). The Pedro Bay Tanaina have hunted and trapped along the upper river and many have trap lines in this area at the present time. It seems unlikely, however, that the Tanaina regularly penetrated below the mouth of the Kakhtul River, although they may have occasionally. Eskimos did sometimes reach Iliamna Lake and there doubtless was considerable contact between Eskimos and Indians in this general area.

Beginning as early as 1887 there was some prospecting activity and placer mining for gold on the Mulchatna (VanStone, 1967, chap. V). As a result, a number of old cabins were observed at various locations along the river. The oldest appear to be at the mouths of the Kakhtul River and Old Man Creek. These date back at least to the turn of the century and seem to have been mistaken for Eskimo sites by Hrdlička (1944, p. 366) in 1931. No indications of Eskimo population could be seen at these locations when I visited them in 1967. Five additional cabins between Old Man Creek and the mouth of the river were observed. These appear to be trapper's cabins of varying ages. One or two may date back to the early years of the century, and at least two were said to be used by Eskimos from New Stuyahok at the present time.

SITE DESCRIPTIONS

Dil-22 Kananakpok

Kananakpok, located on a slough of the main river, is the first site on the Mulchatna and is situated on the left bank about 40 km. above its mouth (fig. 3). The formerly occupied area is perfectly flat, semi-circular in shape, and surrounded by a low, mixed forest made up predominantly of spruce. Just downriver from the site is a small creek called Kananakpok Creek. The cleared area is about 200 m. in length and between 75 and 100 m. deep. At high water the site is less than 2 m. above the level of the water. There are no old style house pits in the area, but at least eight rectangular cabin foundations were noted together with two standing cabins. According to one informant, the name means "where you can see it," possibly a reference to the location of the site along a slough with a view out toward the main river.

In 1930 Kananakpok is mentioned for the only time in the vital statistics of the Nushagak church. During the summer of the following year, Hrdlička came upon the village, rather to his surprise as he had not been told about it while in Dillingham. He referred to it as a reindeer camp and counted nine log cabins and three tents. At the time of his visit few Eskimos were in residence, most of them being up the river branding reindeer. Hrdlička was told that most of the inhabitants of Kananakpok were not born on the Mulchatna but had come to the river only recently. Former residents of the lower river were said to have died in the influenza epidemic of 1918-1919. The villagers had a herd of about 800 reindeer (Hrdlička, 1944, p. 370). A pioneer bush pilot at Dillingham who has flown in the Nushagak region since the early 1930's said that beginning in 1934 he flew regularly into Kananakpok and that there were always a few families there until about 1940.

It is not clear whether the village was occupied the year around or only during the summers. The impression is, however, that it was a year around settlement with perhaps more activity during the summer months when reindeer were rounded up and branded. A New Koliganek informant mentioned that the site of the village was used as a fish camp by New Stuyahok people after it was abandoned and may even be used occasionally as such at the present time. If Hrdlička's figures on houses and tents are correct, it might be assumed that anywhere from 60 to 120 persons inhabited the settlement in the early 1930's. The total period of occupancy would not seem to have exceeded 15 or 20 years. The site must

have been often subject to spring flooding and the slough on which it is located is now closed at the upper end. It can be entered only at the lower end and with considerable difficulty when the water is high. Both these factors may have been responsible for the site's abandonment. It is equally possible that the location ceased to be convenient after the almost total collapse of reindeer herding in the late 1930's (VanStone, 1967, pp. 88-89).

Dil-23 Nauluktulik

There is a small site on the right bank of the Mulchatna approximately 5 km. above Kananakpok. Four traditional Eskimo houses with their tunnels facing down the river were on this site. Immediately downriver from the site is a stable bluff 20-30 m. high which slopes abruptly as a small creek enters the main river from the northeast. The bank then rises on the upriver side of the creek and a tongue of gradually sloping, grass-covered land on which the structures were located is formed. The formerly occupied area is surrounded by a thick growth of willows which are beginning to encroach on the site.

According to an informant at Ekwok, this spot is one where caribou crossed the river and Eskimo hunters would wait for them. In fact, the name, Nauluktulik, means "swimming across." The informant mentioned that there was no one living at this place in his childhood more than 50 years ago. Hrdlička (1944, p. 365, fig. 215) noted the site on his way up the river and a photograph of it appears in his book.

Dil-24 Old Stuyahok (59° 45'N, 156° 50'W)

The Old Stuyahok site is situated on a small slough at the mouth of the Stuyahok River. It closely resembles Kananakpok, being a semi-circular clearing in the forest not more than 300 m. long and about 75 m. deep. The foundations of from 10 to 15 small cabins placed close together could be determined and two dilapidated cabins are still standing. It would appear that many of the cabins were dismantled when the village was abandoned. An informant at New Koliganek who visited Old Stuyahok frequently in the early 1930's maintains that there was no *kashgee*, nor does he remember seeing any old style houses. I could not see the remains of any such houses at the time of my visits to the site in 1964 and 1967. This is surprising since it was occupied before

log cabins were being built in the area. Old Stuyahok, like Kananakpok, was subject to spring flooding and this is said by informants to have been one cause of its abandonment.

In the winter of 1891 A. B. Schanz and his party visited Old Stuyahok on their way to Lake Clark. Schanz (1891, no. 1882, p. 156) noted that while there were a number of "huts," there was only one inhabited house in which six starving people lived. This is the only reference to the settlement in the sources. The Stuyahok River is shown on Fassett's map as the "Swan or Est-y-a-rok River." In 1950 there were several elderly people living in Ekwok who had been born in Old Stuyahok, but it is unlikely that the village was very large during the late nineteenth and early twentieth centuries. It may even have been totally abandoned at times, perhaps after the great influenza epidemic.

It would seem to have been during the 1920's that the community began to grow. Two informants in Dillingham stated that people came to the settlement from a village some 25 km. up the Stuyahok River, but this information could not be verified. Some may have come from settlements on the Nushagak. In any event, the above-mentioned bush pilot who flew into Kananakpok in the 1930's, also flew regularly to Old Stuyahok and he said that during the decade between 1930 and 1940 the settlement was a thriving community with more than 20 occupied houses and a population of at least 60 and perhaps many more. The most recent recorded birth at Old Stuyahok among residents of Nushagak villages in 1964 was 1938 and the site was abandoned shortly after that date. Informants stated that most of the inhabitants moved to New Stuyahok which was established in 1940. Some, however, went to Nunachuak and Ekwok. As mentioned previously, there have been no Eskimos living permanently on the Mulchatna River since about 1940.

It appears likely, then, that the Old Stuyahok site was occupied more or less continuously from about 1890 until around 1940. At the beginning it was small, but grew rapidly in the closing years of occupation. It is possible that as many as 150 persons lived there at one time, but most of the time the number was probably less. Hrdlička apparently did not notice the village on his trip up the river in 1931. This is perhaps not surprising since the settlement is not easily visible from the main channel and may have been abandoned or nearly so during the summer months.

Chapter 4

Village Sites On Nushagak Bay

INTRODUCTION

Nushagak Bay is a large tidal embayment about 32 km. wide where it opens into Bristol Bay. Funnel-shaped, it narrows to about 4 km. off Dillingham at the mouth of the Nushagak River. From Etolin Point northward there are many shifting channels and shoals in the middle of the bay with extensive tidal flats and shoals along the west side as far as Coffee Point. The ship channel varies but generally lies west of the center of the bay and ranges in depth from eight fathoms off Coffee Point to about four fathoms off Dillingham. Tidal currents are said to be strong, with the ebb being slightly stronger because of the current from the Nushagak and Wood rivers (fig. 15).

The country bordering on Nushagak Bay is, for the most part, a swampy lowland, virtually treeless and possessing a tundra type of vegetation. Along the beach are gray silts that form the tidal flats. Gravel beaches occur in some locations, particularly where the land rises to form cliffs of alluvial material. The west side of the bay northeast of the Snake River is low and tundra-covered in some places, but rises occasionally to form bluffs 20-35 m. in height. In the region around Dillingham stands of spruce begin to appear and continue northward as isolated patches to the Wood River Lakes. On the east side of Nushagak Bay the foreland rises in gently rolling benches to a height of more than 35 m. in the vicinity of Nushagak. The coast north of this point consists of either gravel bluffs or moderate slopes well back from the water with a silt plain in front of them along the shore.

Although there are no rivers of importance flowing into Nushagak Bay along the east coast, there are two of significance which enter the bay along the west coast not including the Wood River which flows into the Nushagak at its mouth. The Snake River heads at Lake Nunavaugaluk and flows southeast 73 km. to the bay. The

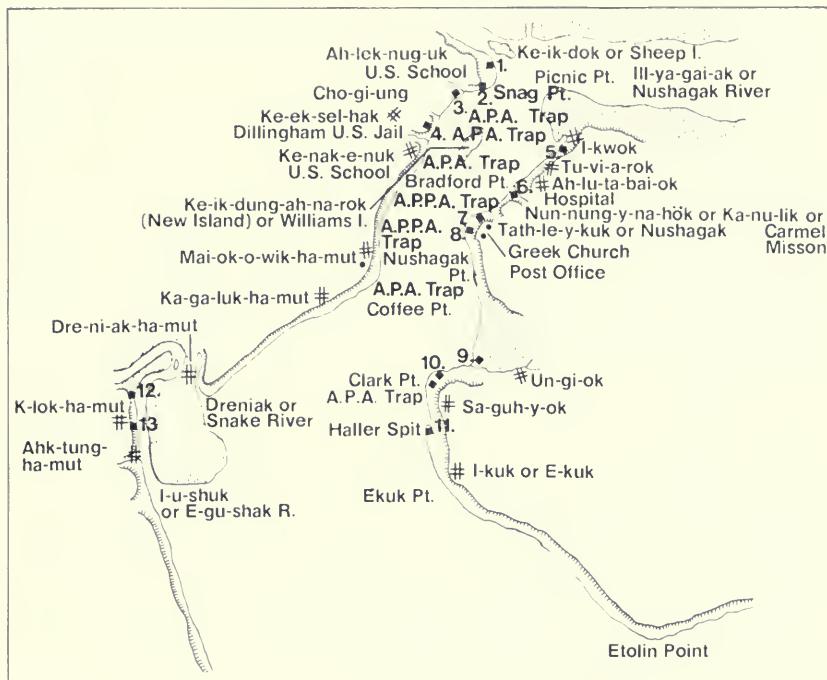


FIG. 30. Fassett's map of Nushagak Bay (redrawn).

1. Alaska Salmon Co., "Wood River" cannery.
2. Alaska-Portland Packers Assoc., Portland or "Snag Point" cannery.
3. Alaska Packers Assoc., P.H.J. or "Scandinavian" cannery.
4. Alaska Packers Assoc., Bradford or "B.B." (reserve) cannery.
5. Site of C. E. Whitney & Co. saltery.
6. Alaska Packers Assoc., "Rohlff's" or Arctic cannery.
7. Northwestern Fisheries Co., "Northwestern" or "Whaler's" cannery.
8. Alaska Fishermen's Packing Co., "Fishermen's" or "Astoria" cannery.
9. Columbia River Packers Assoc., "Creek" or "Combine" cannery.
10. Alaska Packers Assoc., "Clark's" or "N.C." cannery.
11. North Alaska Salmon Co., "Haller's" cannery.
12. Alaska Packers Assoc., saltery and trap.
13. Peter M. Nelson, saltery and trap.

Igushik River heads at Amanka Lake and flows southeast 80 km. This river was known to the Russians and appears in Tebenkov's (1852, map 4) atlas as "R. Iguzhak."

SITE DESCRIPTIONS

NB-4 Ekwagamiut, Ekochamute

On the eastern shore of Nushagak Bay approximately $7\frac{1}{2}$ km. above Nushagak and at a point where the bank recedes and turns toward the east, is the site of a salting station and small village (fig. 15). Dillingham informants referred to it as Ekwagamiut and it may be the place called Ekochamute in Carmel mission records during the 1880's and 1890's (Alaska material, box vi, records of ecclesiastical acts, no. 3). It is shown on Fassett's map as "I-kwok" (fig. 30). The site has no access to the water at the present time because of the rapid growth of grass-covered tidal flats in the area. For this reason, during surveys in 1966 and 1967, it was seen only from the air. Presumably there was a slough by which the site could be reached during the period of occupation.

At the south end of Ekwagamiut are the foundations of two large, square-to-rectangular structures which presumably are the remains of saltery buildings. The saltery was that of C. E. Whitney & Company and was originally built and operated by the Bristol Bay Canning Company on the Snake River in 1886. It was moved to the other side of the bay in 1892 (Moser, 1902, p. 205). Near the remains of the saltery buildings are two Eskimo house depressions and two partially collapsed log cabins. A row of four or five small house depressions stretch along the bank to the north of the saltery buildings.

It is possible that Ekwagamiut was occupied by as many as 50 or 60 people at the time the saltery was in operation. In 1900 62 whites and three natives are said to have been employed in salting fish (Moser, 1902, p. 205). The total period of occupancy, which was probably seasonal, may cover no more than 20 or 30 years, including the last two decades of the nineteenth century when there were a number of salteries in Nushagak Bay.

NB-5 Tuviarok

Not more than a kilometer below Ekwagamiut is a small site called Tuviarok by several informants in Dillingham. Like Ekwagamiut, it is presently cut off from the waters of Nushagak Bay by

mud flats and was observed only from the air. Four or five small house depressions are situated on a spit extending in a northeast-southwest direction. The spit slopes up to the south of the houses so that the inhabitants would have had a view only toward the north and the northeast. The entire spit is surrounded by a grassy plain, but a small creek still flows down from higher country to the east and penetrates the grassy tidal flats as far as the bay. Tuviarok is shown on Fassett's map and informants believe that it was not occupied after about 1910. John Clark, the agent of the Alaska Commercial Company at Nushagak in the late nineteenth century, is said to have operated a saltery at this location. It would appear that the site was seasonally occupied with a summer population that is unlikely to have exceeded 50.

NB-6 Ahlutobaiok

About $1\frac{1}{2}$ km. northeast of Kanulik is another small site that was observed only from the air. It consists of four or five small structures on a bluff, at least some of which appear to have been log cabins. To the north of the site the bluff is cut by a dry creek and, like the other sites above Kanulik, this one is isolated from the water by a broad, flat, grassy plain. A Dillingham informant called this site Ahlutobaiok and the settlement is shown on Fassett's map. It is said to have been occupied around the turn of the century up to about 1910. The village is not mentioned in the vital statistics of the Nushagak church, or in any other source with the exception of a single reference by the Rev. Frank E. Wolff (SPG Proceedings, 1886, p. 23) who, at the time he was constructing the original mission buildings at Carmel in 1886, noted the presence of a small village immediately to the northwest. Considering the small size of the houses at Ahlutobaiok, it is unlikely that more than 35 persons were in residence at any one time.

NB-7 Kanulik (58° 58'N, 158° 28'W)

The site of the village of Kanulik and the Moravian mission of Carmel is located on the east side of Nushagak Bay about $6\frac{1}{2}$ km. above Nushagak and up a narrow slough just south of the lower end of Grassy Island. The high bluff which is characteristic of the shore line at the Nushagak site slopes down to the north until the bank in the vicinity of Kanulik is no more than 10 m. above the level of the bay. Grassy flats, cut by numerous sloughs, spread out in front of the site. This vast area of tidal mud flats and high grass

has been steadily growing through the years. Growth has been so extensive and rapid that the large slough, called Ralph Slough after the cannery that formerly stood next to Kanulik, is now largely filled. The site, which formerly could be reached by large ocean-going vessels, is now almost completely isolated in a sea of mud and grass, and can be reached only at high tide in a boat of very shallow draught. This process of silting in was noticeable even at the time the Carmel mission station was occupied and it undoubtedly was a factor in the eventual abandonment of the village.

The Kanulik site and mission are located on a tongue of land with two sides formed by Ralph Slough and the third by a small stream which cuts sharply toward the south. Near the tip of this tongue, which rises approximately 10 m. above the tidal flats, are the remains of the Arctic Packing Company sometimes called Ralph's cannery, established in 1884 (fig. 31). Two dilapidated buildings can still be seen together with pier pilings which extend out into what once was the slough. At the northeast end of the site near the cannery buildings 11 structures were identified, only four of which are the remains of traditional Eskimo houses. The others, some of which are shown in the upper left-hand corner of Figure 31, are square or rectangular in shape and may have been cabins or outbuildings associated with the Carmel mission. To the south of these structures is a broad, flat, grassy area where the main mission buildings were located. Their outlines can be seen clearly from the air, but on the ground they tend to be obscured by thick, tall grass. At the extreme southeast corner of the site are four house depressions that were located on the fringe of the mission buildings. To the east of the formerly occupied area is a relatively low, marshy meadow which extends inland approximately 400 m. before the land begins to rise gradually in a series of low, rolling hills.

Kanulik is mentioned in the vital statistics of the Nushagak church for the first time in 1843 and regularly thereafter until 1916. In the tenth federal census the population is given as 142, but this figure may include summer residents from other villages in the area (Petroff, 1884, p. 17). Bailey (1880, p. 26) lists 98 persons living in "Kanovlik" in 1879, the last figures before rapid change came to the settlement. In 1884, as previously noted, the Arctic Packing Company established the first salmon cannery on Bristol Bay at the village (Moser, 1899, pp. 173-174; VanStone, 1967, pp. 67-68), and two years later the Moravian Church chose this location for the establishment of its mission station called Carmel



FIG. 31. Cannery of the Arctic Packing Company at Kanulik.

(VanStone, 1967, pp. 38-40). The Rev. Frank E. Wolff, who was responsible for the construction of the original buildings, stated that "the spot chosen (for the construction of the buildings) . . . stands about four hundred yards to the southwest of the 'cannery' and about the same distance from the water's edge on the bay side, and about two hundred yards directly back of the village toward Nushagak" (SPG Proceedings, 1886, p. 23).

In the report of the eleventh federal census, the population of Kanulik is listed as 54 people living in seven houses (Porter, 1893, pp. 5, 164). Carmel is listed separately as having a population of 187 including 74 whites, 17 "Indians," and 96 "Mongolians." The latter doubtless refer to Chinese laborers who, from the very beginning of the salmon fishery in Nushagak Bay, were brought up from California and Hong Kong during the summer months to work in the canneries (VanStone, 1967, pp. 73-78). Since the total of 243 for both Kanulik and Carmel includes both whites and Chinese workers, the census data was presumably collected during the summer months. The relatively small size of Kanulik suggests that an attempt may have been made by the census enumerator to separate summer residents from the permanent population. This figure is more reasonable than the one in the tenth census and need not indicate a marked decline in the population. In 1898 Elliott (1900, p. 740) lists 124 people as living at Kanulik, a figure that doubtless includes the Carmel mission.

In January of 1900 the Moravians collected the census and noted that the population was growing due to the increasing tendency for Eskimos to move to the vicinity of the cannery and the mission. In that year Carmel, including Kanulik, had a population of 151 permanent residents living in 31 houses with all the mission buildings being counted as one. Of that number, there were eight white families including white men married to native women and, presumably, mission personnel (SPG Proceedings, 1900, p. 46).

Kanulik is not included in any federal census after 1890, nor is it possible to say with certainty just when the cannery of the Arctic Packing Company closed down. It is known to have been operating as late as 1907 (Freeman, 1908), after the Moravians had departed, but there is some indication that it closed shortly after that date and definitely by 1916 (U.S. Coast Pilot: Alaska, pt. II, 1916, p. 240). In 1900, the "Nushagak" post office was located at Kanulik (Moser, 1902, p. 201).



FIG. 32. Moravian mission buildings at Carmel.

In 1896 an attempt was made to start a "new village" at Carmel which was to be located west of the mission, the old village having been situated to the northeast. This new village was laid out in a straight east-west line and consisted of three log houses inhabited by two Eskimos who were helpers at the mission and a white man with an Eskimo wife. The experiment seems to have been a failure as other Eskimo families showed no interest in the new village (SPG Proceedings, 1897, p. 22; 1898, p. 27).

As far as the mission itself is concerned, in 1891 it consisted of the original dwelling house, a school house, a large chapel, and a garden (Schwalbe, 1951, pp. 51-52). In 1905 when Bishop J. Taylor Hamilton visited the mission just prior to its closing he made the following detailed observations of the physical plant:

Several houses of natives and also of white men who have married Eskimo women stand on the Mission tract. The station itself, on a bluff rising thirty-five feet or so above high water, consists of the following frame or log houses. Connected by their rear extensions, the first house, lately the house of Dr. J. H. Romig, and the former school, containing the chapel, the hospital and the dwelling of Brother Paul Zucher, may be described as central in relation to the group of mission buildings. The former building is a story-and-a-half, the latter two stories in height. The chapel occupies the eastern end of the larger house, and has windows on the north, east and south, with its entrance to the south. Its recently papered walls and its new, plain, unvarnished pews make a pleasant impression on the visitor. It can seat about seventy-five persons, with space for extra chairs. Both buildings are furnished with cellars and are neatly painted externally. At some distance to the north of the larger building stands the school, of logs shingled on the outside, with a room accommodating desks for twenty scholars, a wood-shed and a loft in which supplies are stored. Closer to the larger mission-house and somewhat to the northwest are the storehouse and barn, built of logs and under one roof, a long low house. To the east of the group that constitutes the mission houses proper is a workshop. A large wood and sled-house, a frame barn and a small smokehouse, at some distance from the dwelling houses and to the southeast, not far from the river's bank and the wharf, complete the list of buildings. Between these last and the shore lies the mission garden proper, well fenced on account of the dogs, and one hundred paces by twenty-six in extent. There is also a smaller garden, or potato patch near the stable. Finally, the mission has its wharf, built on piles—for the tide here may sometimes make a difference of twenty-six feet—and an inclined railway, the tracks being wooden, on which a car is drawn up onto the bluff by means of a windlass by horse-power, in order to bring from the boats below supplies of merchandise or fish or the wood required by the Mission for fuel (Hamilton, 1906, p. 30).

There is a photograph of the mission buildings (fig. 32) in the S.P.G. Proceedings (1905, opposite p. 53).

Bishop Hamilton noted further that the influence of the mission and the cannery had had a decided effect on Eskimo housing at Carmel and Kanulik. At least five houses built by the Eskimos

combined new ideas with old building techniques. They had windows and were heated in winter with stoves made of sheet iron or improvised out of five gallon kerosene cans (Hamilton, 1906, p. 31).

In the summer of 1905 the bishop noted that about 100 Eskimos were living in the vicinity of the mission but it is likely that the number decreased somewhat when Carmel was abandoned the following year (Hamilton, 1906, p. 31). The closing of the cannery sometime before 1916 must have caused a further decline in the population. Many people doubtless moved to Nushagak, while others crossed the bay to new settlements that were growing up on the west side. It is not certain when the site was finally abandoned, but elderly informants at Dillingham believe that the last families either died or moved away following the influenza epidemic of 1918-1919.

By way of summary, it can be noted that the Kanulik site was probably occupied at the time of first European contact in the area. The village seems to have reached its peak in size when the Arctic Packing Company cannery and the Moravian mission were in operation. At least it can be said with certainty that at that time the settlement was a focal point for a concentration of population during the summer months. With the elimination of these attractions and the general trend for villages on the west side of Nushagak Bay to assume greater importance, the village declined to the point where the influenza epidemic was able to eliminate, or nearly eliminate, the population.

NB-8 Nushagak (58° 57'N, 158° 29'W)

The Nushagak site is the most prominent feature in the Nushagak Bay area, located as it is on a bluff much higher than the coast line on either side of it. The fact that the slope is rather abrupt on both sides gives the bluff its unique appearance and makes it a definite landmark. In front of the bluff is an extensive gravel and mud beach, the greater part of which is submerged by high tide. In this beach area stand the remains of two canneries, both directly in front of the bluff. During the summer of 1969 four houses on the Nushagak site were excavated. The result of these excavations, together with related ethnographic and historical data, will be incorporated into a separate study of this important trading center. Therefore, the discussion of the Nushagak site here will be restricted to a brief description of its physical characteristics and sufficient

historical and ethnographic background to indicate its position in the settlement configuration of Nushagak Bay.

The site is situated about 35 m. above the beach and the ascent, even when one of several paths are followed, is a steep one. Six buildings still stand on the formerly occupied area including the Russian Orthodox church of St. Peter and St. Paul, the third church building to stand on the site since the construction of the first chapel in 1832 (VanStone, 1967, p. 22). Between the church and the southern end of the site, a distance of approximately 250 m., 18 house depressions were counted, a number that can be considered only approximately correct due to the very high grass that covers the site in summer. This number does not include the remains of several structures on the edge of the bluff that were probably cabins and other frame buildings built by white and Eskimo residents; some of these may have been associated with the canneries, the church, or stores. The area north of the church to the northern peripheries of the site, approximately 175 m. in length, has been considerably disturbed and it is in this area that the structures still standing today are located. Nevertheless, three house depressions could be seen and at one time there were doubtless more. Assuming that the total of 21 traditional houses is reasonably correct, Nushagak is the second largest archaeological site seen in the entire river system. Only Kanakanak, directly across the bay, is larger.

Nushagak was the site of Aleksandrovski Redoubt constructed by the Russians in 1818 and it continued to be the trading center for the Nushagak River region from that time until well into the American period (VanStone, 1967, pp. 49-57). No plan or detailed description of the early Russian post exists and it is unfortunate that buildings constructed on the site in more recent years have obliterated indications of the older Russian structures. Conflicting opinions have been expressed by informants with reference to these older structures. Some have maintained that the Russian buildings were on the beach back against the bluff where, at a later date, the warehouses and store of the Alaska Commercial Company were located. Others have suggested that these buildings were on the point at the south end of the site. A careful examination of the formerly occupied area makes clear the virtual impossibility of locating the remains of the Russian buildings except by the merest chance. The entire site clearly indicates the disruption caused by the presence of two large salmon canneries in the area, both in continuous operation for more than 30 years.

Directly in back of the church building is an upward extension of the bluff which has the appearance of a hill when viewed from the beach. A path leads from the church up this hill and the village cemetery is situated on top with the graves extending back onto the tundra. A heavy growth of willows obscures most of the cemetery and only the most recent graves are visible. In fact, by far the greatest part of the cemetery has been totally obliterated by the advancing willows which are moving down hill along the total length of the site and have even encroached on some of the peripheral structures.

It is not difficult to see why the Nushagak bluff was considered a good location for a village and trading post. There is a commanding view of the entire bay area and certainly no one approaching the river could fail to notice the location or to appreciate its advantages as a place of habitation. Fishing is good directly in front of the site and beluga are frequently seen today along this section of shoreline. Drinking water is available from a small stream that flows down the bluff at the north end of the site, and there may have been other sources of water in the general area during the period of occupation.

The Eskimo name for the Nushagak site, as for the river, is Tahlekuk (Porter, 1893, p. 91). The village may have been occupied prior to the construction of Aleksandrovski Redoubt in 1818 (Tikhmenev, 1939-41, pt. II, p. 396), although the Russians did not normally establish their trading posts in existing settlements. The earliest population figures indicate that in 1849 there were 74 men and 94 women living in the community and ten years later there were 76 men and 103 women (DRHA, vol. 2, p. 3). These figures suggest the continued importance of the village during a period when other posts had been established in southwestern Alaska and Aleksandrovski was no longer as significant a trading center as it had been between the time of its founding and 1845 (VanStone, 1967, pp. 52-54).

Sometime between 1872 and 1874, during three seasons of work in Alaska, the historian and naturalist Henry W. Elliott visited Nushagak and not only provided the most detailed description ever made of the settlement (Elliott, 1875, pp. 375-376), but drew a sketch of the village as well (p. 374). He gives no population figures and, in fact, does not specifically refer to his visit in any detail. However, a few years later, in 1879, Bailey (1880, pp. 26-27) lists a population of 121 for the settlement divided as follows:

33 creoles, 12 Aglegmiuts, and 76 "Kuskoquims." These figures not only indicate that the village maintained a fairly uniform population throughout the Russian period, but suggest, if the proportions and sub-cultural affiliations are correct, the extent to which migration from the Kuskokwim was already an established fact in this area.

A noticeable jump in population for the village is indicated in statistics obtained for the tenth federal census where 178 residents are listed including one Euro-American, 86 creoles, and 91 Eskimos (Petroff, 1884, p. 17). This increase in a period of less than two years suggests that Petroff's figures include temporary summer residents. The eleventh census ten years later gives a population of 268 for Nushagak living in 25 houses. This is broken down into 64 Euro-Americans, 20 creoles, 85 "Indians," and 99 "Mongolians" (Porter, 1893, pp. 5, 164). If the latter category refers to Chinese cannery workers, as has been previously assumed, this is difficult to understand since, according to reliable information, canneries were not established at Nushagak until 1899. In the summer of 1888 the Governor of Alaska, A. P. Swineford, visited Nushagak and noted that the settlement consisted of a store, the church and parsonage, a few log cabins occupied by creole families, and from 30 to 50 semi-subterranean houses (Swineford, 1898, pp. 162-163). He says nothing about cannery buildings or employees. A final nineteenth century population listing for Nushagak was made by C. P. Elliott in 1898. He gives a reasonable listing of 63 men and 58 women for a total of 121 (1900, p. 740).

In 1899 the Pacific Steam Whaling Company and the Alaska Fishermen's Packing Company erected canneries directly in front of the settlement (VanStone, 1967, p. 70), and these must have had an important effect upon the village. This importance is probably reflected in the population figures for 1900 which were 324 (Thirteenth Census of the United States: 1913, vol. III, p. 1134). A marked decline to 74 is noted in 1910 which may reflect several factors, notably the season of the year in which the census data was gathered, the exact nature of the fishing industry in that year, and the growing importance of settlements on the west side of the bay (Fifteenth Census of the United States: 1930, vol. 1, p. 1222). Regardless of the significance of these factors, however, it is apparent that the Nushagak settlement was decidedly in decline after 1900. In 1920 the population is given as 16 and in 1930 as 43 (Fifteenth Census of the United States: 1930, vol. 1, p. 1222). After 1930 the village is no longer listed in the census reports.

Some of the reasons for the decline of Nushagak are apparent in the data that has been presented, but it might be well to summarize them here. The two salmon canneries were abandoned during the 1930's and this doubtless was an important factor, although the settlement's decline began long before these establishments ceased to operate. Of much greater significance were the attractions of Dillingham which emerged as an important center in the 1920's and 1930's. The population of the west side of the bay continued to grow throughout this period at the expense of the east side. It is probably true too that the influenza epidemic of 1918-1919 took its toll at Nushagak as it did at other villages in the region. In 1916 Father Vasili Kashevarov, who, except for a period of six years, had been the priest at Nushagak since 1896, died and was not replaced. Although a respected lay reader was in residence until 1963, people were drawn away from the historic church and attended services at the Orthodox church near Dillingham. In 1964 there were two families with houses at Nushagak and even they did not spend the entire year there. In 1969 only one family remained.

NB-9 (Ungiok)

This site, which I did not see and about which no information could be obtained from the sources, is shown on Fassett's 1910 manuscript map as being located inland in the Combine Flats area approximately 5 km. northeast of Clarks Point. A Dillingham informant recognized the name and noted that there were three occupied frame houses at this location during his childhood in the early 1920's. He thought that at one time the settlement had been much larger.

NB-10 Stugarok, Sayuyuk, Clarks Point (58° 30'N, 158° 33'W)

The village of Clarks Point, about 3 km. above Ekuk, is occupied at the present time and there are indications that its occupation goes back at least to the end of the nineteenth century. In 1888 the Nushagak Packing Company established a cannery on the Clarks Point spit which at that time was known as Stugarok. This settlement is listed in the eleventh federal census as having a population of seven living in one house (Porter, 1893, p. 164). Some informants stated that an older village was situated on the bluff in back of the present settlement, but others maintained that people had always lived on the spit. In any case, no site was noted on the

bluff at the time of a rather cursory search in the summer of 1964. A sketch map of Nushagak Bay in Moser (1902, opp. p. 196) shows a "native village" on the bluff. This map was made in 1890 with additions in 1900. A settlement called "Sayuyuk" is shown on Fassett's map, but it is impossible to tell whether it is on the bluff or the spit. The post office at Nushagak was moved to Clarks Point in 1935 (Ricks, 1965, p. 13). It seems probable that Eskimo occupation at Clarks Point does not precede the establishment of the cannery by very many years. The community has continued to be a cannery town with a large influx of population during the summer months, but a very small number of permanent inhabitants (VanStone, 1967, pp. 150-151).

NB-11 Ekuk (58° 49'N, 158° 33'30" W)

Like Clarks Point, the village of Ekuk is inhabited at the present time (VanStone, 1967, pp. 151-152), but it is also the location of a large and important archaeological site. The old settlement was situated on the northern edge of the Ekuk Bluff (see Nushagak Bay quadrangle) at the southern end of a narrow spit on which the present-day village is located. The Ekuk Bluff runs in a north-westerly direction to the vicinity of the site and then turns abruptly to the east. Wave and ice action have formed a narrow spit of gravel bars nearly 4 km. in length at this point. In back of this spit is an extensive marshy area cut by numerous sloughs. The spit, including the marshy area, is a little more than a kilometer in width at its widest point.

The Ekuk site appears to have been cut back considerably by water and ice, so much so that only a small portion remains. It is separated into two sections by a ravine which runs down the center and at one time contained a stream. The north side of the site is protected by the spit and is no longer cutting. The south side is still being rapidly cut away. A beacon light on the site is shown on the Nushagak Bay quadrangle 100 m. back from the edge of the bluff. In the summer of 1964 the light was about to fall over the bank and had been replaced by another one located down on the spit. The topographic survey on which the map is based was conducted between 1946 and 1950.

The Ekuk Bluff in the vicinity of the site is 20 to 25 m. high and on the south side of the ravine there are two large house depressions close to the bank (fig. 33). On the north side an occupied house stands at the base of the site almost in the ravine. The outbuildings

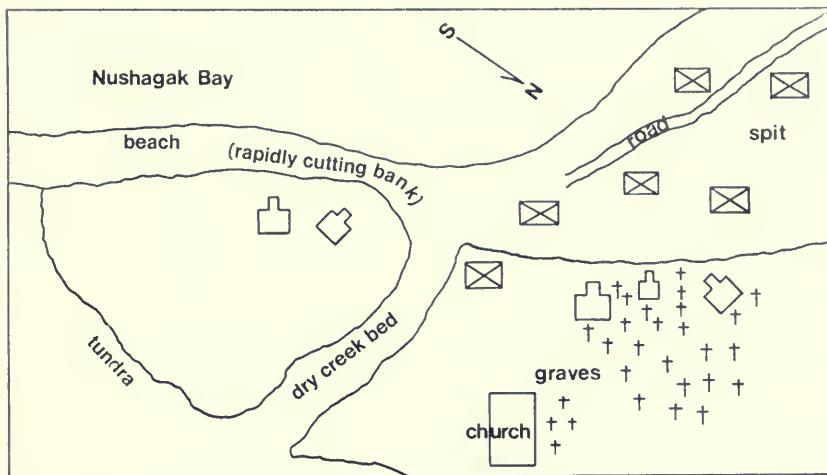


FIG. 33. Sketch map of NB-11 Ekuk. Not to scale.

and dog tethering places associated with this dwelling have destroyed some midden. At the top of the bank and at the very rear of the site stands a Russian Orthodox church still used by the villagers even though it is a long way from the present-day dwellings at the end of the spit. In front and north of this structure are many graves. Among these graves near the front of the site are three house pits, all with their tunnels facing the bay. On the south side of the ravine, in the area where the bank is rapidly cutting, almost 2 m. of midden could be observed. Further to the southeast the midden is shallower, probably not more than a meter in depth. Bones, metal, wood, and very thick, coarse, plain potsherds were picked out at random.

From an ecological standpoint, the location of the Ekuk site seems to be a good one. Situated on a high bluff with a good water supply and commanding an excellent view of the bay, the site would appear to meet most of the desirable requirements for a coastal settlement. Fish and beluga are plentiful in the area at the present time and it is likely that sea mammals were abundant in the past. A good gravel beach would have been an additional advantage. The site may have lost some of its advantages when the spit began to build, although the water has always remained close. However, the cutting bank doubtless was a significant factor in the decline of the settlement, and the presence of the cannery at the north end of the spit would also have encouraged people to move in that

direction. Presumably such a move took place gradually. It would appear, however, that until 1900 most Ekuk residents lived on the bluff. The previously mentioned sketch map of Nushagak Bay in Moser (1902, p. 196) shows the village on the bluff with no buildings of any kind on the spit.

It seems clear that Ekuk was a large and important village during the late prehistoric period. The earliest historic reference to the settlement was made by the Russian naval officer Vasili Stepanovich Khromchenko who anchored off the bluff on May 28 (OS), 1822. Residents of the village came out to the ship in *baidarki* and Khromchenko, rather than proceed up the bay to Aleksandrovski Redoubt, transferred his crew and equipment by small boat to the post (Khromchenko, 1824, pt. 10, p. 314; pt. 11, pp. 38-40). From that time on Eskimo guides from Ekuk were used by most vessels bringing supplies to Aleksandrovski, their captains being unwilling to risk running aground on the treacherous tidal flats of the bay (Russian-American Company Records, Communications Sent, vol. 10, folio 103).

Ekuk is mentioned frequently in the vital statistics of the Nushagak church throughout the period covered by the data; that is, from 1842 to 1931. This being the case, it is surprising that no other Russian sources specifically mention the settlement, although there are frequent references in the Records of the Russian-American Company to an Aglegmiut village, probably Ekuk, near Aleksandrovski. It also seems that a priest seldom visited the community. Perhaps it was considered to be close enough to Nushagak so that the inhabitants could be expected to come to the post to fulfill their spiritual as well as their material needs.

Not until 1879, therefore, are the first population estimates for the village available. In that year Bailey (1880, pp. 26-27) lists 107 inhabitants of Ekuk, 79 Aglegmiuts and 28 "Kuskoquims." For the tenth federal census a year or two later, 112 residents were enumerated (Petroff, 1884, p. 17). The size of the community at that time gives some indication of the number of house pits that have been obliterated by the cutting bank. A marked drop in the population is noted ten years later when data for the eleventh federal census was collected. At that time Ekuk had a population of 65 living in six houses (Porter, 1893, pp. 93, 168). From this time on the population of the settlement steadily declined.

An Orthodox chapel is mentioned as being located at Ekuk in 1890 (Porter, 1893, p. 183) and in 1903 the North Alaska Salmon

Company opened a cannery at the north end of the spit. It was later sold to Libby, McNeil and Libby and is still in operation at the present time (Cobb, 1931, pp. 462-463). Population figures for Ekuk after 1890 are unreliable, but it is significant that official census reports contain no figures for the community from 1890 to 1930, and again from 1940 to 1960. It is likely that between the former set of dates the population seldom rose above 25 (Rogers, 1955, p. 4) and in 1930 the figure was 37 (Fifteenth Census of the United States, 1930, vol I, 1931, p. 1222).

Today Ekuk, like Clarks Point, has become almost exclusively a cannery town with practically no permanent year around population. As might be expected from trends that have already been noted, the attractions of developing communities on the other side of the bay have drawn population away from this cramped, windy spit. Nushagak itself may even have played a role in the depopulation of Ekuk in the two decades before that center began to decline. If this were indeed the case, it would explain why Ekuk's big drop in population began after 1880 while Nushagak's did not take place until 20 years later.

NB-12 Igushik (58° 42'N, 158° 53'W)

On the west side of Nushagak Bay there was a pattern of former population all along the Igushik Ridge from the point marked Igushik on the Nushagak Bay quadrangle to the first bend in the Igushik River. The Igushik Ridge is a steep bluff which, at its southern end, is more than 20 m. above the water level. To the north along the Igushik River the bluff slopes away toward the flat, marshy tundra that characterizes the banks of this river. Although there are wide, grassy flats separating the bluff from the beach throughout this area, it is obvious that the bluff has been sloughing away, particularly in the vicinity of the Igushik site. Because of tidal activity and extensive mudflats along this part of the Nushagak Bay shoreline, access to the sites in this region is very difficult. In spite of several efforts, I was never able to visit the Igushik Ridge area. The information that follows, obtained during brief air surveys in 1965 and 1967, is far from complete.

At the southern end of the Igushik Ridge is the site of the former village of Igushik, at one time one of the largest and most important villages on the west side of Nushagak Bay. The site does not extend back away from the bluff to any great extent and between 15 and 20 house depressions can be seen strung along the

bluff, close together, with their tunnels and entryrooms pointing in every direction. There also appear to be some structures that are not Eskimo houses; probably cabins and other buildings built in the later years of the site's occupation. From the air the site clearly stands out as a green area surrounded by the greenish brown, treeless tundra that is characteristic of this section of the coast. A cemetery is visible at the upper end of the site.

Although the Igushik River was apparently known to the Russians, there are no references to the village in sources of this period. It is mentioned regularly in the vital statistics of the Nushagak church between 1876 and 1894 but for reasons that cannot be determined, there appear to be no earlier or later references. The priest at Nushagak was apparently making regular visits to the village by 1883 (DRHA, vol. 2, pp. 145-146) and by 1900 a chapel had been constructed (McElwaine, 1901, p. 181). The settlement is listed by Bailey (1880, p. 26) as having a population of 84 in 1879, but the inhabitants were not enumerated for the tenth federal census. However, in 1899 it had a population of 123 (Elliott, 1900, p. 740). Apparently not long after the turn of the century the settlement began to decline and this may be why it is not shown on Fassett's manuscript map. In 1930 the population was 28 and in 1940 it was 16. The community was completely abandoned, except for occasional summer residents, not long after the latter date.

Informants noted that Igushik was hard hit by the influenza epidemic of 1918-1919 and that fact, together with its relative inaccessibility and the growing importance of Dillingham as a cosmopolitan trading center for the entire area, was doubtless responsible for the final abandonment of the village. It is unfortunate that more information is not available concerning the early occupancy of Igushik. Nevertheless, it seems reasonable to assume that the settlement was in existence, and perhaps of considerable size, when the Russians first came into the area. It obviously continued to be important until the beginning of the twentieth century.

NB-13 (Akk-tung-ha-mut)

Approximately 3-5 km. above Igushik on the ridge is a small site located along two sides of a creek that enters the Igushik River. This creek would have provided the inhabitants with fresh water which might otherwise have been difficult to obtain as the tide extends well up the river. The ridge here is not quite as high as at Igushik, but otherwise the general topography is the same.

Approximately ten house depressions were observed from the air, the greater number being downriver from the creek mouth. They appear more rounded and less distinct than those at Igushik. A small cemetery is located at the southern end of the site and the graves seem to have been placed among the old houses.

This site is not mentioned in any of the sources nor could information concerning it be obtained from informants, some of whom seemed to consider it part of the Igushik site. Fassett's map shows two small settlements at the mouth of the Igushik River (fig. 30). It is possible that NB-13 is the site referred to on this map as Ahk-tung-ha-mut.

NB-14 (K-lok-ha-mut)

Still further up on the right bank of the Igushik River, perhaps 3 km. above NB-13, is a site consisting of about five house pits and a small cemetery. Like others in this area, it was observed only from the air. This may be "K-lok-ha-mut," the second of the two villages shown on Fassett's map. Less than a kilometer below this site are the obvious remains of a saltery, probably the Alaska Packers Association saltery. In the National Archives (Record Group 22) there is an annotated copy of United States Coast and Geodetic Survey Chart 9050 of Nushagak Bay showing three saltery sites on the west bank of the Igushik River at its mouth. From north to south they are the Alaska Packers Association saltery, a Libby, McNeill and Libby saltery, and the Peter Nelson saltery. The annotations on this map were probably made about 1919, perhaps somewhat earlier. All these salteries were above Igushik and it may be that both NB-13 and NB-14 were associated with them in much the same way that NB-4 was associated with the saltery in its vicinity.

NB-15, NB-16 (Dre-ni-ak-ha-mut)

At the mouth of the Snake River on the right bank is a very recent site consisting of the remains of four structures, one of which is a partially collapsed cabin. The riverbank here is low and the site is surrounded by the typical tundra vegetation of this general area.

About 6 km. upriver from NB-15 and on the same side of the river is a small site on a bank about 10 m. high with about 25 m. of grassy tidal flats directly in front of it. At the present time there is no fresh water in the vicinity of the site and no indications of a

dried up creek nearby. The house depressions are very obscure but there would appear to be six or seven.

Fassett's manuscript map (fig. 30) shows one site on the right bank of the Snake River. It is called "Dre-ni-ak-ha-mut" and the river is indicated as the "Dreniak or Snake River." The above mentioned map of Nushagak Bay in the National Archives (Record Group 22) also shows a single site on the lower Snake in approximately the same position as NB-15. This map was published in March, 1911.

NB-17

Almost directly opposite NB-16 is a site consisting of four or five house depressions with their tunnels facing the river. The bank rises at this point and the site is about five meters above the level of the river. A 3-5 m. wide stretch of grassy tidal flat extends out in front of the site. The bank looks as though it may have cut at one time and that the site may be smaller now than it once was. There are clumps of willows in the vicinity and a small, stagnant looking creek enters the river. There is also a small lake behind the site.

It was virtually impossible to learn anything from informants concerning these Snake River sites and they are not mentioned in any of the sources, at least not by names that are recognizable to me. One 65 year old Dillingham resident did mention that he could not recall when any of them had been occupied. It seems likely that the three Snake River sites were turn of the century villages or camps and that all had been abandoned by 1920 or shortly thereafter.

NB-18 Tuchuktovik

Just to the south of Coffee Point is a small site which many informants called Tuchuktovik. On Fassett's map, however, it is called "Ka-ga-luk-ha-mut." According to one informant, Tuchuktovik means "to get across," a reference to the fact that this was a narrow place for crossing Nushagak Bay. Here a small creek enters the bay and although the bank in this general area rises as much as 35 m., it slopes off gradually near the creek and then rises slowly on the other side. The bluff again attains considerable height but then slopes off toward the flat, wide mouth of the Snake River. The creek at Tuchuktovik, although not large, has a relatively

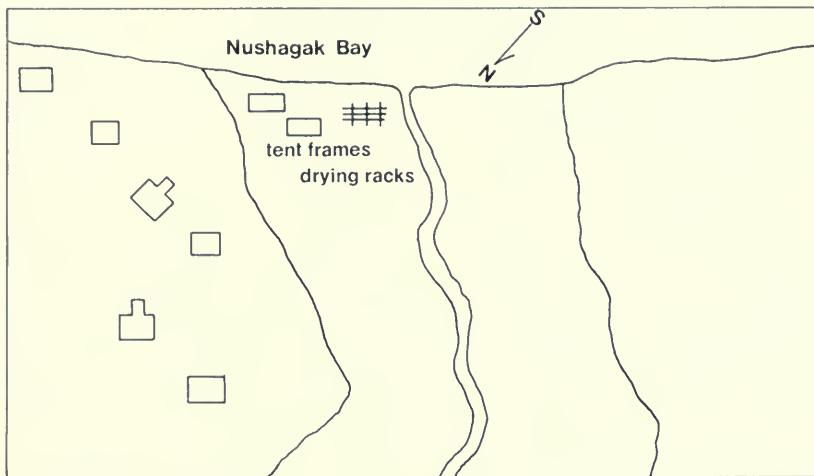


FIG. 34. Sketch map of NB-18 Tuchuktovik. Not to scale.

wide valley that is at least 400 m. across at the mouth and continues wide for at least 2 km. inland with gently sloping banks on both sides.

On the north side of the creek along a low bank not more than 5 m. high and sloping toward the creek bed are the remains of six houses (fig. 34). Four of these are small cabins banked high with sod on all sides and retaining a few of the logs used in their construction. Two shallow depressions resemble traditional Eskimo houses with their short, wide entrance chambers facing the bay. The structures are visible largely as a result of the sod that was piled around them and they doubtless represent a type of Eskimo house greatly modified by exposure to Euro-American building practices. They may even have been above-ground log structures covered entirely with sod and having wide storm sheds which, in a ruined state, resemble more traditional entrance passages. In the flat creek bed near its mouth are several tent frames and drying racks suggesting that the site has been used as a fish camp in recent years.

Tuchuktovik is mentioned for the first time in the vital statistics of the Nushagak church in 1914 and is referred to in each of the three succeeding years. However, the records are fragmentary for the years between 1915 and 1931. One informant, born at Togiak but a resident of Dillingham since 1922, said that one or two families were living at Tuchuktovik when he first moved over

to Nushagak Bay. It seems unlikely that the site was occupied for more than 15 or 20 years or that it was inhabited by more than 40 or 50 people at one time. It may have been a fish camp or spring sea mammal hunting camp for people whose permanent homes were farther up the bay.

NB-19 Miogavik

Six and a half kilometers northeast of Tuchuktovik at the mouth of a small creek is Miogavik, a place name mentioned by several informants as being the location of an old village. The shore line is high throughout this area, just as it is to both the north and south, ranging from 35 m. down to about 8 or 10 m. At the location of the site the bluff slopes gradually and there is a rather wide creek bottom. The vegetation is thin and tundra-like with just a few scattered clumps of willows. No house pits could be seen and it is apparent that the site has been almost completely cut away. Near the top of the slope on the north side of the creek is a small cemetery, part of which also seems to have been cut away.

Miogavik is mentioned in the vital statistics for the first time in 1906 and continuously through 1915. Informants were not in agreement about the abandonment of the site. Some said it was wiped out during the influenza epidemic of 1918-1919, while others maintained that it had been occupied somewhat later. It was not possible to obtain information concerning the size of this settlement, but it probably was similar to Tuchuktovik and may also have been a fishing and hunting camp.

NB-20 Kanakanak

The old Kanakanak site, perhaps the largest and most important nineteenth century settlement on Nushagak Bay, is located about 1 km. south of the United States Public Health Service Hospital and the present village of Kanakanak. Since the latter was also occupied at the close of the nineteenth century, it is necessary to keep these two locations separate; just one of the complicated problems of nomenclature that must be faced in discussing settlement patterns on the northwest side of the bay.

The Kanakanak site is located at the point where a small creek enters Nushagak Bay and creates a wide breach in the high bank that characterizes the shore line in this area. In fact, as has previously been noted, the west shore of the bay is consistently high from just north of Kanakanak as far south as Coffee Point. In

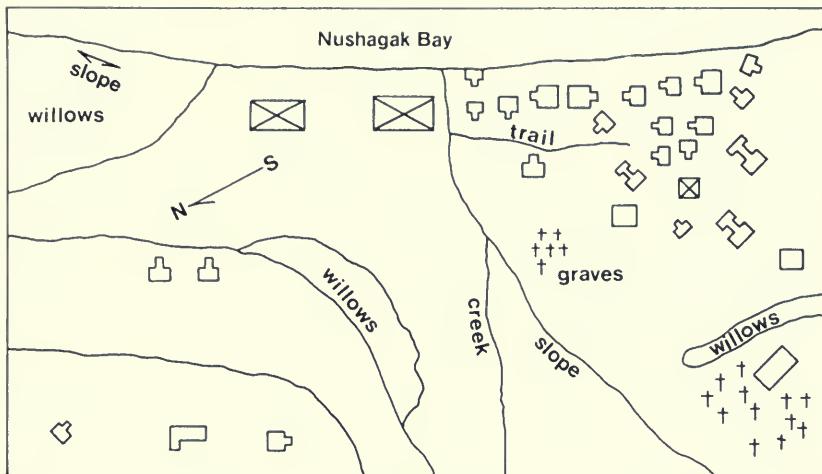


FIG. 35. Sketch map of NB-20 Kanakanak. Not to scale.

the vicinity of the site the bluff is 20 to 25 m. high, but it slopes abruptly at either side of the small creek. At the creek mouth a flat area about 50 m. wide occurs on the north side but on the south the slope rises abruptly. Inland it turns away to the north and south with the land rising gradually; thus a small valley is formed through which the creek flows.

On the flat area north of the creek at its mouth stand two sheet-metal buildings which formerly housed a small hand-pack salmon cannery (fig. 35). The slope immediately north of this area is covered with scrub willows, although there are occasional open places. Due west are two small rises, one above the other. On one of these are two house pits, and on the other two house pits and a cabin foundation. The structures on the second ridge appear very recent and the so-called house pits were probably above-ground cabins with sod piled around them and small storm porches similar to those house remains described for Tuchuktovik. One informant stated that these structures were formerly occupied by families from Nome who worked for the Kanakanak hospital just a few hundred meters to the north, but it was not possible to verify this information.

It is on the south bluff near the edge that most of the house depressions on the Kanakanak site are located. Here the remains of 20 houses could be determined and it is probable that there are more. At the time of the survey, grass was extremely high on the

site making it difficult to obtain an accurate count of the house pits. In the Nushagak region, archaeological survey should be carried out as soon as possible in the spring before the grass, which covers all historic sites, has an opportunity to grow. Far back on the ridge to the south is a standing cabin and two cabin foundations. At least one of the house pits toward the front of the site is in the process of being cut away and there is every indication that much of the Kanakanak site has already fallen into the bay. In fact, local inhabitants who have lived in the area 30 or more years agree that as much as 20 m. of the entire front of the site has been cut away during their lifetime.

Some of the house pits still to be seen are quite large, their main chambers measuring up to 6 by 8 m. Others are somewhat smaller, the smallest being approximately 4 by 5 m. Tunnels and entry-rooms seem to extend in every direction, but the greatest number point north toward the head of Nushagak Bay. Well back from the house depressions and obscured from view by a low ring of scrub willows stands the church foundation surrounded by a small cemetery. Another cemetery is located on the brow of the bluff well back from the edge. On the face of the cutting bank it is possible to see some midden, but not nearly as much as might be expected. If much of the front of the site has been cut away, then presumably the largest deposit of midden has disappeared too.

With the bulk of the houses above the creek on the south bluff, a good view up the bay was possible for the residents of Kanakanak and perhaps more protection from prevailing storms coming from the southeast. This is a type of protection that inhabitants of settlements on the other side of the bay would not need. Informants state that there was once a fair amount of sizeable timber in the area and today, just a few kilometers north in the vicinity of Squaw Creek, there are some stands of large spruce. At the present time, however, the site is completely barren of trees except for scrub alders. Inland the high grass disappears to be replaced by tundra vegetation with occasional clumps of alders in sheltered places.

Kanakanak is mentioned regularly in the vital statistics of the Nushagak church between 1843 and 1914. It seems certain that the settlement was an important population center well before the arrival of the Russians. The village is infrequently mentioned in the journals of the missionaries perhaps for the same reason that Ekuk is seldom mentioned; the residents were within the sphere of influence of the church at Nushagak and were not often visited by a

priest or lay reader. However, there appears to have been a chapel in the village by 1900 and perhaps much earlier (McElwaine, 1901, p. 181).

The first population figures for Kanakanak are not available until 1879 when Bailey lists 51 residents, a surprisingly low figure for this date (Bailey, 1880, pp. 26-27). The settlement is not mentioned in the tenth federal census, and it is apparent that Petroff, or his enumerators, did not visit the west side of the bay at all. In the eleventh census of 1890, the population of Kanakanak is listed as 53 persons living in five houses, a figure that also seems very low. After 1890 it is difficult to make reliable and accurate statements about the population of old Kanakanak since New Kanakanak is in existence by this time and it is not always clear to which village the sources refer.

Taking into consideration the number of house pits now visible on the site and the fact that many structures have been washed away, it would seem that the settlement must have had at one time a population of at least 150 even allowing for the fact that all houses were probably not occupied at the same time. An elderly informant at Dillingham said that his father had taken the census just before 1900 and there were approximately 150 people in the village at that time. However, he may have been referring to the later settlement that grew up around the cannery at the mouth of Bradford Creek.

In 1904 the Moravian Bishop Hamilton made a clear distinction between Kanakanak and New Kanakanak, noting that the former had a population of 40 (Hamilton, 1906, p. 39). Although supporting data is lacking, it is probably true that Kanakanak reached its greatest size before 1880 and that it was in decline by the time Bailey collected his population data from Nushagak church records in 1879. A new growth presumably took place after 1890 in response to economic development on the west side of Nushagak Bay. Unfortunately, this rapid growth cannot be documented either, because census records fail to distinguish between the two Kanakanaks. A factor in favor of this point of view, however, is a statement by Hrdlička (1944, p. 380) that the village was large until the influenza epidemic when many residents died and the rest moved to other settlements. Informants are agreed that the site was totally abandoned after the epidemic.

NB-21 Bradford, New Kanakanak, Olsenville

Under this site number and the next an attempt will be made to outline the development of the major settlements on the west side of Nushagak Bay at the present time, New Kanakanak and Dillingham, and to straighten out the confusing nomenclature that exists in this area. A single site number is assigned to the New Kanakanak complex even though two settlements are involved. However, the villages considered are in close proximity and the growth of one has influenced the other. Actually there are few settlement indications of an archaeological nature to be considered in this area. The time period covered is roughly from 1886 to 1910 and, in a few instances, later.

In 1886 the Bristol Bay Canning Company built a salmon cannery on the western shore of Nushagak Bay at the mouth of a small creek, unnamed on maps, which some people in the area have called Cannery Creek and others Bradford Creek. The location of this cannery, which was referred to locally as the Bradford cannery, was little more than a kilometer above the village of Kanakanak (VanStone, 1967, p. 68). There is now a short loop road off the main road between the Kanakanak hospital and Dillingham at this point and a mooring place at the mouth of the creek for fishing boats. The site of the cannery, which ceased operation in 1907 and was apparently dismantled shortly thereafter, has washed away.

The place name Bradford occurs for the first time in the eleventh federal census and is listed as having a population of 167; 83 whites, 1 "Indian," and 83 "Mongolians" (Porter, 1893, p. 5). Obviously these figures are made up mostly of cannery workers, but a small settlement appears to have grown up around the cannery, a settlement that remained after the fishing operations had ceased. The high bank on the south side of Bradford Creek was called Bradford Point and is so named on the Nushagak Bay quadrangle. Water towers for the cannery were located on this bank and, according to informants, four or five families lived at this place; vague indications of their houses can still be seen.

In October of 1904 a post office was established at Bradford, but it was given the name of Dillingham in honor of Senator William P. Dillingham of Vermont, chairman of the Senate Committee on Territories. In 1903 Dillingham and his subcommittee had conducted an extensive tour through Alaska, the first comprehensive investigation of Alaska by a congressional committee (De Armand,

1958, p. 39; Orth, 1967, p. 272). By 1905, New Kanakanak, as it was coming to be called rather than Bradford, was the largest village on the west side of the bay with a population of 120 (Hamilton, 1906, p. 32), and a school had been established in the same year. Official population figures in 1900 and 1910 have to be questioned because of a tendency to confuse New Kanakanak with Kanakanak and the village of Chogiung 8 km. to the north that was also growing rapidly. It seems likely, however, that the population varied between 140 and 170 over this period. In 1918 the Bureau of Education building at New Kanakanak was enlarged and remodeled as a hospital and the following year construction was begun on an orphanage to care for orphans created by the influenza epidemic (VanStone, 1967, p. 104).

About a kilometer above the Kanakanak hospital and just to the north of Bradford Creek, site of the old Bradford cannery, is a small cluster of houses known today as Olsenville. This community appears to have some antiquity, comparatively speaking, although it has always been a settlement of whites and creoles. Present residents say that it was once much larger than it is now and it doubtless was within the sphere of influence of the Bradford cannery and the attendant development of Bradford, or New Kanakanak. At one time the community was called Nelsonville, named perhaps for Senator Knute Nelson of Minnesota, a member of Senator Dillingham's subcommittee (Orth, 1967, p. 681). The name was changed in recent years, apparently because so many Olsens live there. Fassett's manuscript map shows an Eskimo village called "Ke-ek-sel-hak" in this location but no information could be obtained concerning it.

Olsenville, or Nelsonville, is not listed in any census reports and its inhabitants were doubtless enumerated first with the residents of Bradford-New Kanakanak and later with those of Chogiung-Dillingham. An informant at Olsenville stated that her father was born in the village in 1894. A single old cabin on the edge of the bluff has 1903 San Francisco newspapers pasted on the wall under the wallpaper. The area has been extensively bulldozed for the construction of new houses so that there are no other remains of old cabins. Also the bluff, about 10 m. high at this point, has cut considerably during the period of occupation. These factors, and the absence of information from informants, make it virtually impossible to estimate the population of Olsenville at the beginning of the twentieth century. There is a small cemetery on a hill in

back of the village with burials dating back to 1913 and some undated Orthodox crosses that appear to be older.

Dil-25 Chogiung, Dillingham, Snag Point

The settlement of Chogiung at the site of the present town of Dillingham appears in the vital statistics of the Nushagak church for the first time in 1894, although presumably the village was in existence for some time before that date. According to informants, the old village, which has been completely obliterated by the modern town, was located at the front of a bluff along a gentle slope which led to a small stream, long since filled in, flowing into Nushagak Bay. The site apparently was an extensive one being at least 450 m. long and as much as 200 m. deep. Informants born in Chogiung or the surrounding area before 1918 are not numerous due to the depredations of the influenza epidemic. There are several, however, who were born in the village near the turn of the century. They can remember a large number of old style Eskimo houses, but they also remember a growing number of white residents and log cabins. The cemetery on the bluff just above the northern end of the old village has headstones dating back to 1883 with a particularly large number in the decade between 1900 and 1910. Those buried there, however, appear to be predominantly whites or creoles. Remains of small cemeteries with a few standing Orthodox crosses can still be seen at several locations in town. The settlement is said to have received its name, which means "bad water," from the fact that the only good spring in the area was located just below one of the cemeteries (Parker, 1951, p. 3; Anonymous, 1959, p. 9).

Perhaps the first major outside influence on Chogiung, an influence that was to foreshadow the future importance of the settlement, was the construction of the so-called "Scandinavian" cannery less than 1 km. south of the old village in 1885. This was only the second cannery to be constructed in Nushagak Bay and it operated almost continuously for more than 50 years (VanStone, 1967, p. 68). Economic development began to concentrate in the area and Chogiung grew rapidly at the expense of communities on both sides of Nushagak Bay. As Rogers (1955, p. 4) has pointed out, with economic activity increasing throughout the bay area, it was natural that one point would develop as the economic and population center of that area. Some time after 1904, the post office which had been established under the name of Dillingham at New Kanakanak was moved to Chogiung but the name Dillingham

does not seem to have been applied to the community until many years later. A school was established at the new Dillingham in 1920.

Further confusion with regard to nomenclature is created by the fact that the high bluff at the north end of Dillingham is called Snag Point and is so designated on modern maps. The settlement, in some sources, is also referred to as Snag Point. Thus it is necessary to keep in mind that Chogiung, Dillingham and Snag Point are all different names for the same community, just as Bradford and New Kanakanak are also the same place but distinct from the Eskimo village of Kanakanak.

As might be expected, this confusion of nomenclature makes it difficult to use the various population estimates available for the area, since the sources do not always correctly distinguish the various communities and names. For example, the eleventh federal census, as has been noted, gives a population of 166 for Bradford, but it is not completely clear which communities are included in that figure even though it has been assumed here to refer to Bradford-New Kanakanak. Chogiung as a name does not occur in either the tenth or the eleventh census. The population of "Knagnak-Chugiong" is given by Elliott (1900, p. 740) as 140, while in 1900 a population of 145 is listed for "Kanakanak (Chogiung)" (Thirteenth Census of the United States . . . 1910, vol. III, 1913, p. 1134). In 1905 Bishop Hamilton (1906, p. 39) noted that Chogiung had a population of 40, which suggests that at that time, New Kanakanak was still the largest community on the west side of the bay. Figures of 165 in 1910 and 182 in 1920 suggest that the population of New Kanakanak and Chogiung were combined. Informants state that Chogiung was particularly hard hit by the influenza epidemic of 1918-1919. Only eight persons are said to have survived. It was not until 1930 that the Bureau of the Census correctly listed the town of Dillingham in the census returns at which time it had a population of 85 (Fifteenth Census of the United States: 1930, vol. I, population, 1931, p. 1222). After that the figures for the two settlements are again combined but it is clear that Dillingham began to grow rapidly at the expense of its southern neighbor (VanStone, 1967, pp. 153-155).

Before leaving the Nushagak Bay area, it is necessary to note an old village that was reportedly located on the Snag Point bluff north of Dillingham and slightly northwest of the old air field. Elderly informants speak of this site as having been abandoned long before they were born, although it seems to have been occupied

into the historic period. No traces of the site now remain as the bluff is cutting rapidly in this area. Informants maintain that as late as 1930 it was still possible to identify some of the old house pits but beyond that no information could be obtained. It may be that the old site on Snag Point overlapped Chogiuung in time and, for that matter, may even have been an extension of it.

Chapter 5

Settlements Along the Wood River

INTRODUCTION

The Wood River heads in Lake Aleknagik and flows south-southeast 32 km. to the Nushagak River just northeast of Dillingham (fig. 15). Along the lower reaches of the Wood the left bank is low and marshy, reflecting the tidal flats type of vegetation that characterizes the mouth of the Nushagak River. The right bank, however, is consistently high and heavily forested with birch, cottonwood, willow, and spruce. At the horseshoe-shaped bend above the mouth of the Muklung River the Wood narrows considerably and the bank tends to be high on both sides. Here the water is shallow and, during mid-summer, extremely clear so that salmon moving upstream can easily be seen. This upriver area is consistently heavily forested as is the region around Lake Aleknagik. Archaeological sites along the river are easily visible as cleared areas in the forest.

The Eskimo name for the Wood River is *aleknagik* which simply means "wood." The river was known to the Russians and is shown in Sarychev's (1826, map 3) atlas where it is called the "Alyagnagik" River and in Tebenkov's (1852, map 2) atlas where the name is given as "Aleknagek." On Zagoskin's (1967, map opp. p. 358) map of his explorations in 1843-1844 the section showing the "Aleknagik" River and lake is based on surveys made by Ivan Filippovich Vasiliev during his explorations in the summer of 1829 (VanStone, 1967, p. 10).

SITE DESCRIPTIONS

Dil-26

Just north of the Snag Point bluff is a small site situated on a spit of land which at one time was the right bank of the Wood River (fig. 15). Today the site is separated from the water by a grassy

plain that is more than 400 m. wide. The spit on which it is located formed one side of the mouth of a bay which extended inland almost a kilometer and separated the Dillingham-Snag Point area from Wood River Village. The riverbank is 25 to 35 m. high at Snag Point but it slowly descends until at the location of Dil-26, just inside the mouth of the Wood River, it is about 5 m. high and slopes off even further at the tip of the spit. The vegetation to the south and southeast of the site is marshy in places with a thick covering of salmon berries, blueberries, and blackberries. Dense clumps of willows surround the site and separate the grass-covered spit from the marshy, berry-covered area. The dry bay cuts well back to the south so that the spit at one time must have been nearly surrounded by water.

On the grass-covered occupation area, which appears to be slightly less than 200 m. in length, there are four distinct house depressions with tunnels facing the river (fig. 36). Two others are close to the bank and appear to have been cutting out at one time. At the extreme northwest end of the spit are a number of unidentified pits not shown on the site map.

Dil-26 was tested in 1949 by Helge Larsen of the Danish National Museum. His party visited the Dillingham area as part of an archaeological survey, but extensive excavations in the region were not undertaken. Larsen (1950, p. 178) believed the site to belong to the precontact period but did not consider it earlier than the seventeenth century. His test cuts were small, however, and there would not seem to be conclusive proof that the site is prehistoric.

In size and general appearance, Dil-26 resembles a number of other sites along the Wood River. The fact that the wide, grassy plain has apparently formed since the site's occupation certainly suggests antiquity. Informants maintain that this grassy area has been roughly the same size and shape for at least 60 years and the position of the ruined Wood River cannery buildings just above Dil-26 also suggest that this is true. It is equally apparent, however, that this type of feature can grow rapidly as it did in the vicinity of the Kanulik site across the bay. The appearance of the site, including the distinctness of the house depressions, is similar to those from other parts of the Nushagak River region that have already been discussed. It seems likely, therefore, that it belongs to the early historic period in spite of the absence of trade goods in Larsen's test excavations and the lack of references to the settlement

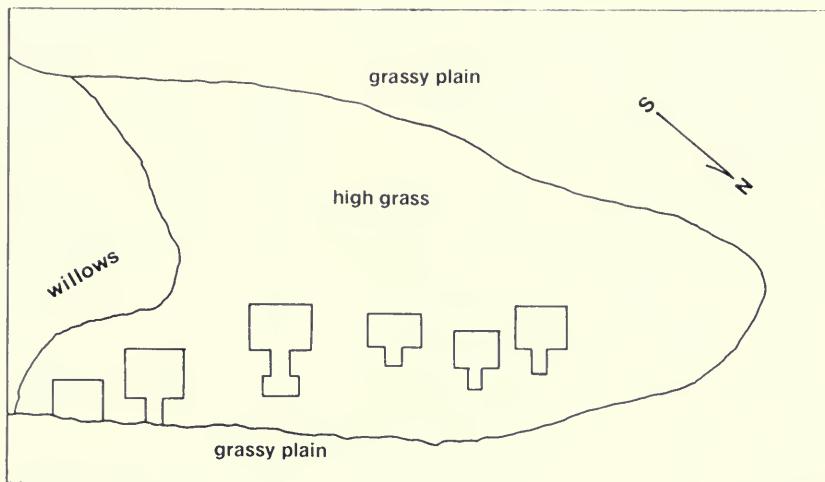


FIG. 36. Sketch map of Dil-26. Not to scale.

in historic sources. A reasonable population estimate for the village would be between 50 and 60 persons.

Dil-27 Wood River Village, Aleknagik (59° 04'N, 158° 26'W)

Wood River Village, although occupied by two families in 1964, is discussed here because it was an important population center at the beginning of this century and is mentioned in a number of sources. The Eskimo name for the site, like the river, is Aleknagik. As previously noted, there are a variety of spellings for this name on some nineteenth century maps and in the sources.

The village is located at the end of a road which connects it with Dillingham, constructed in the early 1930's when the Wood River cannery was still in operation (Mertie, 1938, pp. 26-27). The right bank of the Wood River is approximately 5 m. high in this area and there is a grassy plain about 200 m. wide which extends in front of the bank. Northwest of the road and about 300 m. back from the bank at the top of a gently rising slope is a small cemetery and the foundations of a church. Almost directly opposite the end of the road and a little to the southeast are the remains of the Wood River cannery, established in 1901 and finally abandoned sometime in the late 1930's. It probably did not operate continuously throughout this period, however. Also to the southeast of the road is a small cannery cemetery in which most graves date from the 1920's, although some are earlier. Approximately 75 to

100 m. on either side of the road is a grassy area on which most of the village structures presumably stood. No traditional Eskimo house pits were located, but there are at least 10 cabin foundations and the remains of several structures presumably associated with the cannery. The entire site is about 300 m. in length.

About 450 m. northwest of the Wood River Village site a small creek enters the river and an old reindeer cold storage building in use about 20 years ago is situated here. Families from Ekwok have maintained a summer fish camp at this place in recent years.

It is impossible to determine with certainty the earliest reference to Wood River Village in the sources. It may occur in the vital statistics of the Nushagak church as early as 1846 and it definitely appears there in 1863. The village is not mentioned frequently, however, and it is doubtful whether a missionary visited there often. Perhaps he would stop in the settlement on his occasional trips up the Wood River. In the tenth federal census the village is referred to as "Anagnak" but it is placed incorrectly on the map; a population of 87 is given (Petroff, 1884, p. 17, map 1). In the eleventh census the village is shown on the map (Porter, 1893, map 1) but there are no population figures. In 1898, however, Elliott (1900, p. 740) lists a surprisingly high figure of 196 inhabitants for the settlement.

In 1901 the Alaska Salmon Company constructed a cannery at the village and Dillingham informants believe that the settlement flourished after that date. One elderly informant remembers seeing many sod-covered houses shortly after the turn of the century. A church had been built by 1900 (McElwaine, 1901, p. 181). The village, however, is not listed in the census reports of 1900, 1910, and 1920, although it is shown on Fassett's manuscript map. Perhaps census enumerators visited the settlement before or after fishing seasons when the population was low, possibly less than 25. In 1930 it had a population of 55 (Fifteenth Census of the United States: 1930, vol. I, 1931, p. 1222). Informants remembered that the influenza epidemic was particularly severe just as it had been at nearby Chogiung. The Wood River cannery was still in operation in 1931 (Mertie, 1938, pp. 26-27), but it must have closed shortly thereafter. These events, together with the general consolidation of population in and around Dillingham, were doubtless the most significant factors bringing about the decline of the village.

It would seem that Wood River Village was perhaps more important as a summer settlement than as a place of year around

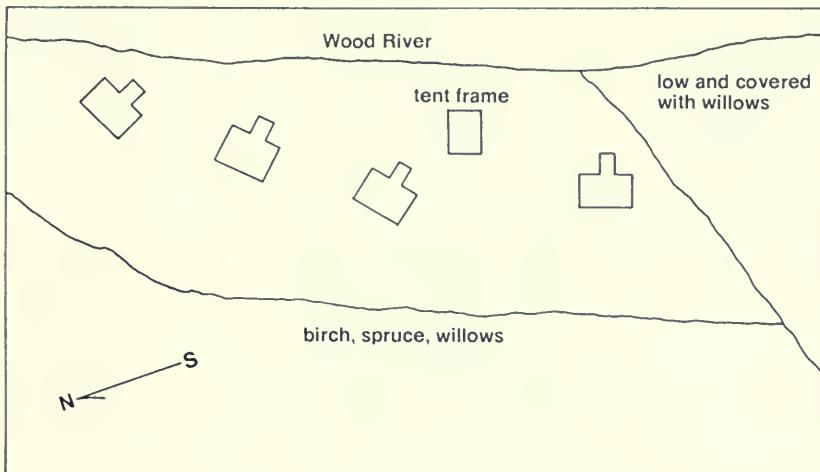


FIG. 37. Sketch map of Dil-29 Vuktuli. Not to scale.

habitation. Although there were doubtless always some permanent residents, informants stated that the area became a large tent city during the summer months when families from other villages throughout the region camped for the purpose of drying fish for their own subsistence and to work in the cannery. This summer activity seems to have continued until the mid-1930's after which the closing of the cannery, camping places closer to Dillingham, or residence in the town itself drained away most of the people who had formerly spent their summers at the mouth of the Wood River.

Dil-28 (Ichuak)

This site was apparently overlooked during a survey of the Wood River in 1964, but informants noted that there had been a small settlement at the mouth of a creek on the right bank of the river just above Sheep Island. The village was called Ichuak and was on a low bank surrounded by a dense growth of spruce forest. A village with a similar name is mentioned regularly in the vital statistics of the Nushagak church between 1891 and 1912 but the identification is not certain and the site is not shown on Fassett's map.

Dil-29 Vuktuli

On the right bank approximately 4 km. above the mouth of the Muklung is Vuktuli, next to Wood River Village, the best docu-

mented site on the river. The bank here is about 7 m. above the level of the water and is cutting. A wooden tent frame stands near the front of the site behind which are four well-defined house pits with their tunnels pointing toward the bank and downriver (fig. 37). To the south the bank slopes abruptly and there is a low, willow-covered area which was probably once a creek bed. Birch and willows surround the site along with a number of tall spruce trees. The area of former occupation is approximately 140 m. long and 50 m. deep.

Vuktuli is mentioned frequently in the vital statistics of the Nushagak church between 1859 and 1866. However, it would seem to have been occupied, at least sporadically, for a considerable period after that date. The only population figures for the settlement are given by Bailey (1880, pp. 26-27) in 1879; 34 residents are listed. A village called "Vuikhtuligmute" is shown on Petroff's (1884, map 1) map, but it is located on the north shore of Lake Aleknagik and no population figures are given. Vuktuli is not mentioned in the eleventh federal census but it does appear on Fassett's map as "Vukh-du-li." Thus it would appear to have been occupied as late as 1901.

Dil-30 (Kaokliok, Nu-nuth-ha-mut)

On the left bank of the river about 6½ km. above Vuktuli is a small site situated on a sloping, grass-covered bank approximately 15 m. above the river level. In this area the river makes a big horseshoe bend from the northeast to the northwest and then to the southwest. From the site there is a clear view downriver about 2 km. to the next bend, but no upriver view at all. The bank is not cutting and the river is very shallow in front of the site. At the top of the slope are two large house pits with their tunnels pointing downriver. In back of one of these houses are the remains of a small cabin, some logs of which are still in place (fig. 38). To the right of the house pits looking downriver is a clump of small birch trees and an outcropping of rock. The thick grass that covers the formerly occupied area does not extend far beyond the house pits and the peripheries of the site are heavily wooded.

Informants called the site Kaokliok, but it is not mentioned under this name in any of the sources. On Fassett's map there is a village designated "Nu-nuth-ha-mut" in this location. This village and Vuktuli were apparently the only occupied settlements on the river when Fassett collected the data for his map in 1901-

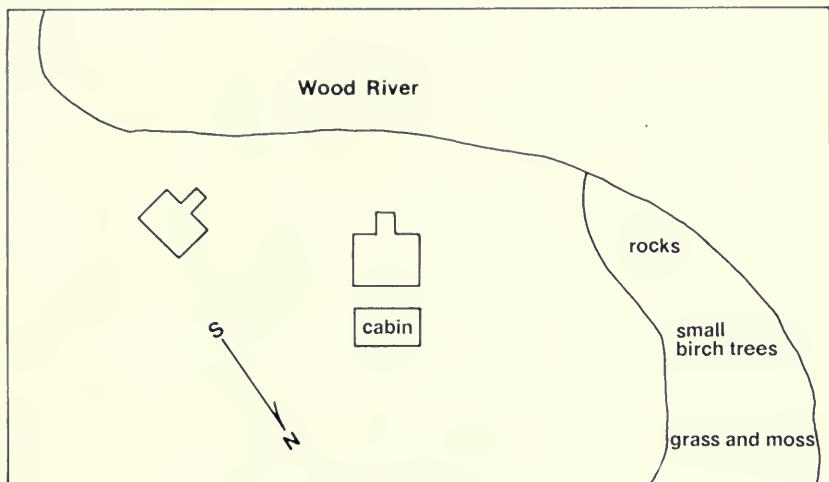


FIG. 38. Sketch map of Dil-30 (Kaokliok). Not to scale.

1902. Like other sites along the Wood River, this one may have been a summer fish camp. The houses and cabin would appear to have accommodated from 20 to 30 people.

Dil-31 (Pikchivik)

From 3-4 km. upriver beyond Dil-30 and on the same side is a flat, cleared area about 50 m. in length and 25 m. wide which has been designated Dil-31. The site is covered with small pits, but no house depressions could be identified. The riverbank in this area is approximately 7 m. above the water level. Informants called this place Pikehivik and said that it had always been known as a good location for picking berries. In late summer, after people had put up their dry fish and were on their way home, they would frequently stop here to pick berries. The site may also have served as a fish camp from time to time.

Dil-32

About $1\frac{1}{2}$ km. above Dil-31 on the same side of the river is a long, narrow site at the point where the river makes a big bend to the west. The formerly occupied area appears to be almost 400 m. in length but nowhere does it exceed 35 m. in depth. Heavy forest growth surrounds the grass-covered site and the riverbank is cutting rapidly. Of all the former settlements observed in the Nushagak River region, this one is one of the more puzzling largely because

of the difficulty of identifying individual houses. Nevertheless, it seemed possible to make out 12 house pits strung along the bank. In addition, there are many pits of varying sizes and these add to the confusion in identifying houses. No midden material could be seen weathering out along the extensively cutting bank.

Informants were not able to give a name for this site, but they seemed of the opinion that it was very old. Hrdlička (1944, p. 377) appears to have examined it in 1931 and he mentions more than 20 houses. This is by far the largest site on the Wood River. It does not differ essentially from the sites previously described except for the difficulty in determining the outlines of the structures. Although this site does not give the impression of antiquity, it nevertheless may belong to the prehistoric period.

Dil-33 (Tutgaralukilgik)

This is a small site on the right bank of the river less than 2 km. below the entrance to Lake Aleknagik. It is situated on a flat bank about 8 m. above the river and is approximately 75 m. long and perhaps 15-25 m. in depth. There are two large house pits on the site as well as a number of sizeable rectangular pits. The former are very indistinct and in that respect somewhat resemble those at Dil-32. A heavy growth of spruce and cottonwoods surround the formerly occupied area, but there is a reasonably good view along the river in both directions.

Informants maintained that the site was called Tutgaralukilgik and they told of a legend concerning an old woman and her grandson who used to live there. The old woman is supposed to have blown on the cottonwood trees that surround the site in order to make their branches turn up in the manner that is actually characteristic of the trees here. A single reference in the vital statistics of the Nushagak church in 1863 seems to approximate the name of this site, but whether or not it is the same village could not be definitely established.

Chapter 6

Settlements On the Wood River Lakes and Tikchik Lakes

INTRODUCTION

Perhaps the most interesting geographical and geological feature of the Nushagak River region is the series of parallel lakes that drain all of the eastern slope of the Kilbuck Mountains. The six northernmost lakes are known as the Tikchik Lakes. From north to south these are Lakes Nishlik, Upnuk, Chikuminuk, Chauekuktuli, Nuyakuk, and Tikchik. Lake Nuyakuk, with an area of 171 km., is the largest of this group. Tikchik Lake is really the lower end of Lake Nuyakuk, but because of the bedrock peninsula that almost separates them, it has been given a separate name (Mertie, 1938, p. 15). Lakes Nishlik and Upnuk discharge into the Tikechik River which empties into Tikchik Lake. Lake Chikuminuk discharges into the Allen River which in turn empties into Lake Chauekuktuli. Lake Chauekuktuli discharges through a short stretch of swift water into Lake Nuyakuk. Tikchik Lake, therefore, eventually receives the water from all five lakes. It drains into and is the source of the Nuyakuk River (figs. 2, 39).

The northern region of the Tikchik Lakes above the mouth of the Allen River is not included in this study. Apparently salmon do not go into lakes Chikuminuk, Upnuk, and Nishlik in any great numbers to spawn and informants maintained that there would be little, if any, evidence of historic human occupation in this area.

South of the Tikchik Lakes is another group of four bodies of water known as the Wood River Lakes. These, named in order from north to south, are lakes Kulik, Beverley, Nerka, and Aleknagik. They are connected with one another by short, fast rivers. Lake Aleknagik receives the water from the other three and discharges into the Wood River.

The higher parts of the Kilbuck Mountains considerably west of the area considered here are composed of sharp, ragged divides, pointed peaks, and high alpine valleys. Where the mountains meet

the lakes, however, they are lower and still further east in the inter-lake area their tops are either flat or rounded in outline. In many places these rounded hills occur as isolated buttes or groups of several buttes separated from one another by broad, low, alluviated valleys. The eastward extension of these hills project outward into the lowland of the Nushagak River (Mertie, 1938, pp. 14–15).

SITE DESCRIPTIONS

Dil-34 Imiak (59° 17'N, 158° 36'W)

At the headwaters of the Wood River on the north shore of Lake Aleknagik is a large, well-known site called Imiak (fig. 39). Here a point of land juts out into the lake and a gentle slope rises about 15 m. above the water. All indications are that the site was on the lower part of this slope, perhaps not more than 5 m. above the level of the lake. It has been largely obliterated by the construction, around 1945, of a Seventh Day Adventist mission school (VanStone, 1967, pp. 155–156). This is an excellent location for fishing as well as affording a commanding position in terms of up-river traffic.

Imiak appears to have been an important settlement during the early Russian period as it is shown in Tebenkov's atlas (1852, chart 4). The village is also shown on Fassett's map where it is recorded as "I-gi-ahk," and on a sketch map of the Wood River and Lake Aleknagik in Moser (1902, opp. p. 200) drawn in July, 1900. The site is mentioned by Baker (1902, p. 215), Cobb (1907, p. 33), and Bower (1924, p. 42). There are, however, no references to the settlement in the vital statistics of the Nushagak church nor is it mentioned in the tenth and eleventh federal census reports. The only possible population estimate is Elliott's (1900, p. 740) reference to a village called "Alaknak" located "on Wood River Lake" and inhabited in 1898 by 114 persons.

Informants maintain that Imiak was the most important village in the area and, in fact, suggest that those sites along the upper Wood River (Dil 30–33) were simply "out camps" where Imiak people fished or perhaps trapped in winter. The village is said to have been virtually wiped out by the influenza epidemic of 1918–1919. At that time cannery workers from Nushagak Bay went up to the settlement and found only one infant alive. They poured gasoline on the bodies in the houses and burned them.

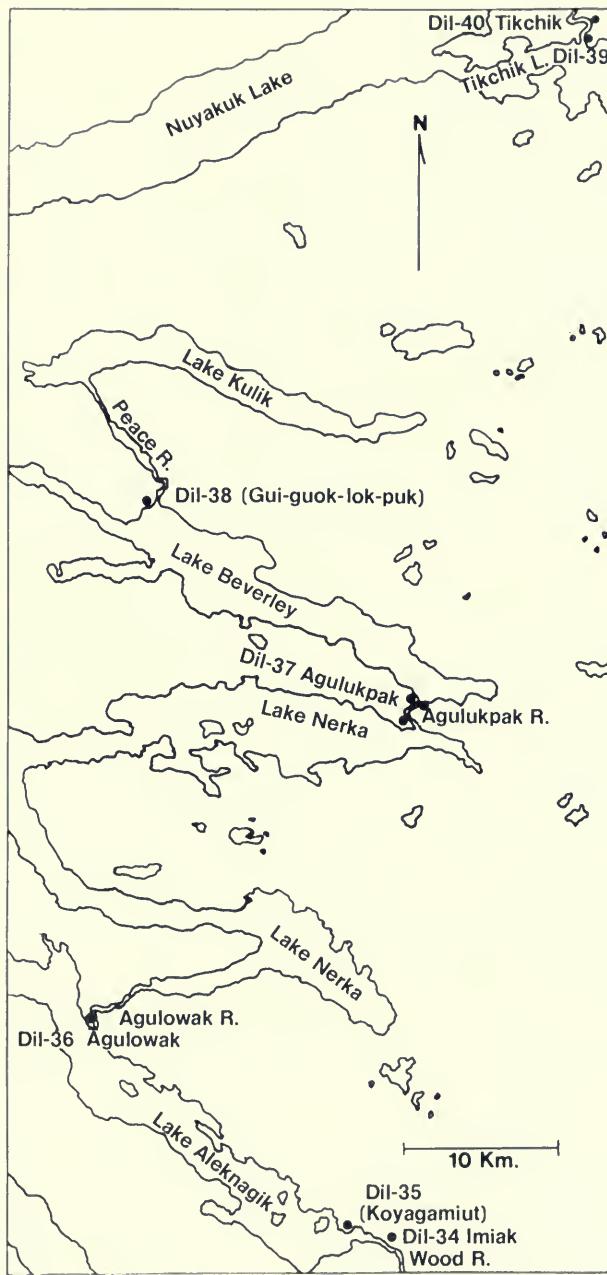


FIG. 39. Map of the Tikchik Lakes and Wood River Lakes.

Dil-35 (Koyagamiut)

This small site is mentioned by Hrdlička (1944, p. 376) as being opposite "Smith's place," now the village of Aleknagik (VanStone, 1967, pp. 155-156). Its existence was confirmed by informants, although the site has been obliterated by buildings and gardens. The settlement was located on a small point of land with a gradual rise of about 10 m. This point forms the northeast corner of a small bay-like area at the east end of Lake Aleknagik. The area would have had definite advantages for fishing since nearly all the salmon coming up the Wood River to spawn in the lakes could be controlled at this point. It is not difficult to imagine the huge numbers of fish that could be taken in this headwaters area before they had an opportunity to spread out into the main body of the lake. Informants called this site Koyagamiut. It is not mentioned in any of the sources nor is it shown on Fassett's map or the above-mentioned sketch map of approximately the same date in Moser (1902, opp. p. 200).

Dil-36 Agulowak

The Agulowak site is close to the mouth on the right bank of the Agulowak River which connects lakes Nerka and Aleknagik. The name is said to mean "many rapids" (Fassett's map), an apt description of this river. The bank in the vicinity of the site is low and flat, not more than 2 m. above the river level. Spruce, cottonwoods, and alders are plentiful in the area but they do not appear to be encroaching on the site to any great extent. There is a small island just opposite the former settlement and a sizeable stand of willows has grown up in front along the riverbank partially obscuring the view toward the lake.

Six large house pits appear like small mounds on the relatively flat surface of the site and there are at least three more which are less well defined. The large structures are very deep and one of them could have been a *kashgee*. Tunnels with entryrooms face either the riverbank or the lake, the latter being about 400 m. to the southwest. There are low areas between the structures suggesting that there is probably very little midden deposit on the site except in the immediate vicinity of the houses. In addition to the nine Eskimo structures identified, the remains of two log cabins were also noted.

Although Agulowak appears to have been a fairly sizeable and important settlement during the nineteenth century, there are few

references to it in the sources. It is not mentioned in the Nushagak church records, nor were its inhabitants enumerated in any census. The village is shown, however, on Fassett's map as "Ah-guh-le-puk," and on the sketch map in Moser (1902, opp. p. 200). Thus it would appear to have been occupied at the beginning of the present century. Hrdlička (1944, p. 379) visited the site in June, 1931, and spent two days excavating for burials. However, he gives no description of the settlement. It would appear that Agulowak might have had as many as 100 inhabitants at the height of its importance which is likely to have been in the last two decades of the nineteenth century.

Dil-37 Agulukpak

The best documented site in the lakes area is Agulukpak, located at both ends of a short river of the same name that connects lakes Beverly and Nerka. This river is typical of those which connect the Wood River Lakes and Tikchik Lakes. It is comparatively wide, swift, and very shallow with a heavy growth of willows, alders, spruce, and birch along the banks. Within a short distance of the riverbank and lakeshores, however, the timbered area quickly gives way to tundra.

At the upper end of the river where it flows out of Lake Beverly there is an extensive cleared area on both sides. The grass-covered banks rise sharply to a height of about 10 m. and on the left side of the river there is a single house pit located well back on top of the bank. The remainder of the large cleared area may have been covered with fish drying racks or perhaps tents. Across the river the cleared area is also large and there are four poorly defined house depressions on the brow of the steep bank some distance from the water. These structures were more or less in a straight row with their tunnels facing the lake.

At the lower end of the Agulukpak River the banks are flat on both sides with spruce and cottonwoods growing close to the shore of Lake Nerka. Here the site is on the lakeshore about 3 m. above the water level and 400 m. west of the mouth of the river. The formerly occupied area is about 100 m. long and 75 m. wide. There are four large, well-defined house depressions, each at least 6 m. square, three of which have their tunnels and entryrooms facing the lake; the tunnel of a fourth structure parallels the lake to the west. In addition to the obvious house pits, there are two deep rectangular structures lacking entrance tunnels. The site is high enough above

the lake and the surrounding country to suggest that there may be some midden deposit.

In terms of appearance, that part of the Agulukpuk site at the north or upper end of the river appears to be the oldest. This is confirmed by elderly informants who maintain that in their youth, shortly after the turn of the century, the only occupation was at the lower end. A village called "Ahkoolichpuk" is said by Bailey (1880, pp. 26-27) to have had a population of 52 in 1879. In the tenth federal census Petroff (1884, p. 17) lists the village of "Akuli-akhpuk" with 83 inhabitants while ten years later in 1890 there were 22 residents in the settlement of "Agulukpukmiut"; four families in three houses (Porter, 1893, p. 5). The village is not mentioned in later census reports, but it is shown on Fassett's map as "Ah-guh-lok-puk." He indicated occupation at the south end of the river only, suggesting that the northern part must have been abandoned at least by 1900 and probably earlier. It is likely, however, that this area continued to be the location of fish camps, probably until the entire site was abandoned and possibly later. The date of this final abandonment of Agulukpuk cannot be determined from the sources. Several informants were born in the village, one as late as 1904, and it may be that the community continued to be occupied until the influenza epidemic of 1918-1919.

Dil-38 (Gui-guok-lok-puk)

There is a small site on the shore of Lake Beverly about 400 m. west of the mouth of the Peace River. The land is low in this area but rises abruptly not far from the lakeshore. There are two house depressions approximately 5 m. square with their tunnels facing the lake. These structures are located on a slight rise about 2 m. from the lakeshore and appear to be quite recent. The entire area of occupation is no more than 75 m. long and about 50 m. wide. A heavy growth of spruce and cottonwoods surround the site.

Although Dil-38 cannot be of great age, the settlement is not mentioned in any of the sources and it proved difficult to learn much concerning it from informants. An old man, born in the late 1870's and currently living at New Koliganek, seemed certain that there was no one living there when he was a young man. On the other hand, a site called "Gui-guok-lok-puk" is shown in this location on Fassett's map. The appearance of the site suggests occupation in this century by not more than 20 or 30 persons.

Dil-39

There are two small houses almost at the mouth of the Tikchik River on the left bank. The four center posts in both structures are still standing, suggesting that they are of no great age. The riverbank in this area is relatively flat with a scattering of spruce trees. According to an informant at New Koliganek, he and his family lived at this site during the winter for a period of 12 or 13 years beginning about 1916.

Dil-40 Tikchik (59° 59'N, 158° 22'W)

The Tikchik village site, which was excavated in 1965 (VanStone, 1968b), is located on the left bank of the Tikechik River about 2 km. above its mouth. The old settlement appears as a cleared area roughly 90 m. long by 38 m. wide on a low bluff about 4½ m. above the level of the river. In the general area of the site the bank is relatively high only at the location of the village and for about one-half kilometer to the south. Below and above this point the land is low and a heavy growth of alders borders the river on both sides. Directly opposite the site the bank is also very low and there is dense alder growth. Thus, in the general area, the settlement was located at the only place suitable on either side of the river.

The village was situated so as to afford a good view down the river toward Tikchik Lake. The riverbank rises gradually to a crest at the very rear of the site which is approximately $10\frac{1}{2}$ meters above the level of the river rising to 15 m. in the eastern corner. Four house pits are located near the front of the site not far from the bank, while the other six and two *kashgees* are clustered toward the rear near the crest of the rise (fig. 40). The prominent location of the larger *kashgee* on the highest point in the general area adds to its impressiveness.

Vegetation in the area consists of spruce, birch, willows, and alders. The latter two virtually surround the site and behind them is an extensive stand of spruce. Although willows and spruce are slowly encroaching on the site, 65 years after abandonment this encroachment has made no real progress. It is not difficult to imagine, however, that within another 200 years the site may be completely tree-covered.

Tikchik was apparently an important village but there are few references to it in the sources. The settlement is mentioned, however, by Vasiliev at the time of his first attempt to penetrate to the

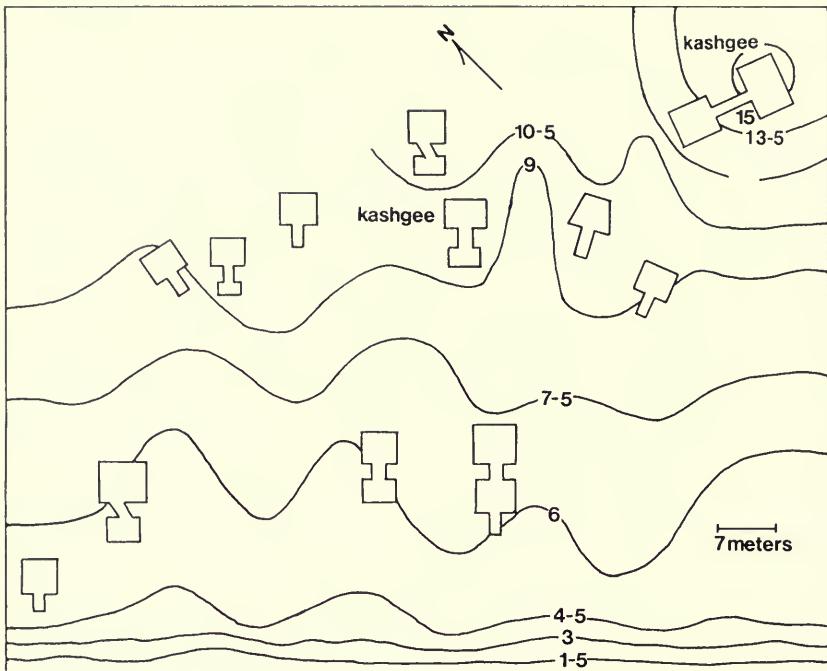


FIG. 40. Map of Dil-40 Tikchik.

interior of southwestern Alaska (VanStone, 1967, pp. 9-10; 1968b, pp. 223-224). In the summer of 1829 he ascended the Nushagak and Nuyakuk rivers to Tikchik Lake at which point his Aglegmiut guides refused to go farther because of their fear of the Kuskowagamiat. The party then stopped at a settlement called "Tuksa" and Vasiliev attempted to persuade some of the inhabitants to guide him across the mountains to the Kuskokwim River. This they refused to do and the party was forced to return to Aleksandrovski Redoubt (Russian-American Company Records: Communications Sent, vol. 6, no. 244, folio 478). It seems certain that the village referred to as "Tuksa" is actually Tikchik since it is described as being in approximately the correct location.

The settlement is first mentioned in the vital statistics of the Nushagak church in 1847 and residents continue to be listed more or less regularly until 1882. There is some indication that the village may have been visited by a missionary as early as 1850. Unfortunately, Tikchik does not appear in any of the census enumerations of the late nineteenth century. It was probably too far

inland to be easily accessible. The settlement is incorrectly located on Petroff's map (1884, map 1) and there is no reference to it in the text. The only population listing is Bailey's (1880, pp. 26-27) figure of 31 in 1879. This seems low in light of the appearance of the site today. There is no reason, however, to believe that all of the houses, the remains of which are presently visible, were occupied at the same time.

An informant at New Koliganek reported that her father, who had lived at Tikchik as a young man, often told her that many residents of the settlement had died from illnesses before he was born. The population was virtually wiped out by the "great sickness," as the influenza and measles epidemic of 1899-1900 is known locally. A single family survived and moved away shortly thereafter. Burials found on the benches in three excavated structures give eloquent evidence of the depredations caused by epidemics (VanStone, 1968b, pp. 260-261, 350-351). Tikchik village is shown on Fassett's map as "Tuk-shik-ha-mut." It had just been abandoned at the time he was collecting his data.

Tay-2

Although there apparently were no settlements at either end of the short stretch of water connecting Nuyakuk Lake and Lake Chauekuktuli, there is a small site just west of the mouth of the Allen River. The land is low in this area and the mouth of the river is segmented by several small islands. The site is probably not more than 150 m. long, 50 m. wide, and about 2 m. above the water level. There are three small house depressions with their tunnels facing the lake. Informants could no longer remember the name of this settlement and even the oldest could not recall a time when it was occupied. It may have been a winter camp for Nushagak River residents, and it is doubtful if it was ever inhabited by more than 25 persons.

Chapter 7

Analysis and Conclusions

SETTLEMENT TYPOLOGY

In the introduction to this report some attention was paid to settlement pattern classifications developed by Chang (1962) and Beardsley et. al (1956). Both systems are clearly applicable to data that have been presented in previous chapters. In this section some aspects of these data will be discussed in terms of the two typologies.

The settlement classification developed by Chang with reference to circumpolar societies appears to fit the circumstances that existed in the Nushagak River region during the historic period. This area conforms to Chang's definition of an annual subsistence region and the various sites that have been described can be designated as seasonal settlements within this region. Some of the village sites along the Nushagak River and its tributaries, as well as on Nushagak Bay, can be identified as sedentary seasonal settlements since they were occupied for lengthy periods of time and their value as fishing sites made it possible for their inhabitants to return year after year for the summer salmon fishing even though they may have spent other parts of the year hunting and trapping in the interior. The fact that some of these settlements were occupied during the winter months also emphasizes the sedentary inclinations of the inhabitants. It is probably true, as previously noted, that the residents of Nushagak Bay settlements were more sedentary than inhabitants of the river and Lakes villages. Here the significance of sea mammal hunting as well as summer fishing created an element of stability in the settlement pattern that did not exist elsewhere.

When it comes to a consideration of Chang's distinction between sedentary seasonal settlements with permanent bases and those with transient bases, the situation is less clear. The question here concerns the length of time that a seasonal settlement must be occupied before it can be considered as a permanent base. It is

true that a number of settlements in the Nushagak River region were occupied for no more than 20 or 30 years and sometimes even less. Their occupancy, however, was probably continuous and the reasons for their abandonment can usually be attributed to something other than a decline in the economic potential of the locale or the exploitative abilities of the occupants. In fact, it was more often factors external to the culture which caused the abandonment of the sites. This being the case, and given the yearly predictability of the salmon runs, it would appear reasonable to consider a majority of the Nushagak area villages as having been sedentary settlements with permanent bases.

There are, however, at least 24 sites discussed in the previous pages that would appear without question to qualify as seasonal settlements with transient bases. These are the hunting and fishing camps that were probably occupied at irregular intervals. On the Nushagak River and its tributaries seven sites (Dil-2-3, 9, 17-18, NB-2-3) have been tentatively identified as summer fish camps, while one (Dil-14) was apparently occupied for a brief period in the fall. On Nushagak Bay seven settlements (NB-4-5, 13-17) may have been associated with seasonal commercial fishing activity and thus occupied only when canneries or salteries were in operation. An additional two (NB-18-19) were probably subsistence fishing or spring sea mammal hunting camps. Most of the Wood River sites may have been fish camps and it has been noted that those along its upper reaches (Dil-30-33) were possibly used seasonally by residents of Imiak on Aleknagik Lake. In the Lakes area one site (Dil-35) is likely to have been a fish camp, while at least two (Dil-39, Tay-2) were occupied by hunters during the winter. It is unfortunate that the distinction between the two types of seasonal settlements cannot be drawn more accurately. On the basis of appearance alone, however, it proved impossible to distinguish with certainty between small seasonal settlements with permanent bases and intermittently occupied fishing or hunting camps.

The Beardsley concept of community pattern, similar to Willey's definition of settlement pattern quoted in the introduction, combines the cultural ecological factors and the sociological factors which Chang sees as characterizing the distinction between settlement and community patterns. The Central-Based Wandering type, as defined by Beardsley and his colleagues, closely fits the seasonal cycle of the Nushagak River Eskimos. This form of

settlement pattern was possible because of the abundance of fish that were the most predictable aspect of the economy from year to year. Fish were taken in large numbers, dried, and stored against shortage of other foods during the remainder of the year. To some extent, this is still the pattern of subsistence at the present time (VanStone, 1967, pp. 137-138).

At the same time, however, the type of inland hunting practiced by the nineteenth century inhabitants of the area necessitated the breaking up of the community into small functional groups that wandered over the interior in search of caribou, moose, and other wild game. These small groups, in some cases perhaps not more than a single nuclear family, also functioned as trappers throughout the contact period. In fact, the advent of trapping probably fostered a more complete segmentation of the communities than had occurred during the pre-contact period. These smaller segments undoubtedly were economically self-sufficient when away from their central bases, and the importance of individual trapping skill is likely to have emphasized this self-sufficiency.

With these factors in mind, therefore, it is apparent that the Eskimos of the Nushagak River region were Central-Based Wanderers inhabiting an area that can be called their annual subsistence region. They occupied sedentary seasonal settlements with permanent and transient bases. Inhabitants of the Nushagak Bay area, while exhibiting all the characteristics just mentioned, were somewhat more sedentary than the river people because of previously mentioned characteristics of their ecological setting. This was probably also true of some settlements in the Lakes area. Informants noted, for example, that Tikchik was virtually a year-around settlement. There was good caribou hunting and trapping in the immediate vicinity of the village which, when combined with extensive salmon runs in the Tikchik River in July and August and the good winter fishing for whitefish and trout in Tikchik Lake, allowed the residents to practice all the subsistence activities that were characteristic of riverine Eskimos without making long trips away from the village (VanStone, 1968b, p. 348).

PREHISTORY IN THE NUSHAGAK RIVER REGION

Although this study is concerned specifically with the historic occupation of the Nushagak River region, it is necessary to speculate briefly concerning the prehistoric base on which this occupa-

tion was founded. Very few indications of a prehistoric population were encountered during the extensive surveys that were undertaken during five summers of field research. One reason for this, of course, is that the special focus of the project precluded a systematic search for evidences of such occupation. Nevertheless, it is apparent that historic settlements in the region were characterized by a special set of features and that these could be recognized again and again as the various villages of the contact period were visited and described. These features included location along a present riverbank or lakeshore, the existence of cleared areas covered with a thick growth of tall grass, house depressions that were usually easily identifiable, deep, and distinctly outlined, and the general absence of extensive midden deposits.

Since all the sites described in previous chapters exhibited, to a greater or lesser degree, the characteristics just mentioned, it follows that prehistoric sites in the area must be quite different in location or appearance or both. Another alternative, of course, is that there was no prehistoric occupation of the region and that the area was uninhabited until penetrated late in the prehistoric period by peoples moving inland from the coast. For reasons that will be examined shortly, this does not appear likely. Therefore, it would seem worthwhile to at least speculate on what prehistoric sites in the Nushagak River region might look like and where they might be located.

During the initial survey of the Nushagak River in the summer of 1964 one site was located which differed from those that have been described in previous chapters. This was a small settlement of four houses on a bluff at the location of New Koliganek. At this point a small creek, now practically dry, flows into the Nushagak and its right bank rises abruptly to a height of 15 m. or more. The house depressions were set 10-15 m. back from the riverbank and, with one exception, their tunnels faced inland toward the creek which runs parallel to the main river for a short distance before emptying into it.

The most significant fact about this site is that a person approaching by water or air today would see no evidence of human occupation at this location. Instead of being covered with a thick growth of tall grass like other sites that have been described, the undergrowth resembled that of the surrounding tundra. In addition, large spruce trees were growing out of the house pits and the pattern of tree growth was the same on the site as it is all along the

riverbank in this area. On close observation, the location does appear satisfactory for human habitation because the bank is high and there is a stream entering the river. Many historic sites along the Nushagak are similarly located. It is probable too that the stream was much larger when the site was occupied and would have provided clear drinking water and perhaps a sheltered place for keeping boats.

This interesting site was discovered by accident while I was taking an evening stroll in the vicinity of New Koliganek. Two of the structures were tested rather extensively, but no artifacts were recovered. By 1969 the site had been destroyed as a result of the expansion of New Koliganek. It was completely unknown to informants.

The right bank of the Nushagak River is stable throughout the greater part of its length as far as its confluence with the Nuyakuk; the bank is high in most places. It is likely, therefore, that prehistoric sites similar to the one just described might be located along this bank. Any search for such sites would have to pay special attention to the type of environment in which historic sites are situated: high banks at or near points where small creeks enter the river. Such places would have to be investigated even though they were heavily overgrown with trees and other vegetation. An observer should expect the surface indications of prehistoric sites along this right bank to resemble those just described for the site at New Koliganek as well as the presumably prehistoric parts of such settlements as Agivavik (Dil-11), Nautauagavik (Dil-18), and Dil-21.

The left bank of the river is low, although there is slightly higher country resembling an old riverbank to the east. Prehistoric sites might be located on these higher ridges. Again such sites would be difficult to find unless the investigator could make shrewd guesses based on knowledge of settlement patterns in historic times. It should be emphasized, however, that such guesses would presuppose a way of life in the prehistoric past not greatly different from that practiced by Eskimos in the area at the time of historic contact. A population relying more on hunting than on fishing might not necessarily occupy the riverbanks but perhaps would be more likely to frequent the higher country to the north in the Nushagak Hills outside the area covered by this study.

As far as the Mulchatna and Wood rivers are concerned, the same factors that have been discussed for the Nushagak apply.

In the Lakes area the situation is less clear. It might be assumed, however, that the most favorable locations for prehistoric settlement would be the same as those utilized by historic peoples. On Nushagak Bay the old sites have long since been cut away as the shore line is constantly changing in this area. It seems clear, however, that such settlements as Ekuk (NB-11), Igushik (NB-12), and Kanakanak (NB-20) had prehistoric components and others may have too.

The length of time that might be required for an abandoned village along the rivers of the region to become completely overgrown with trees and undergrowth is important. With reference to Tikechik (Dil-40), it has been noted that although there has been some encroachment by willows and spruce since the settlement was abandoned nearly 70 years ago, the cleared area is essentially the same size it was when the last residents moved away shortly after the measles and influenza epidemic of 1899-1900. While some encroachment was noted at other sites in the area, at none had it progressed to the point where the formerly occupied area could be said to be even partially hidden from view. Although encroachment, once begun, might progress rapidly, it seems certain that any site in the area would have to have been totally abandoned for at least 200 years and probably longer before the natural vegetation completely reasserted itself. It is difficult to believe that an area as rich in fish and game as the Nushagak River region was not occupied extensively and for a long period of time before the beginning of the historic era. Prehistoric sites are almost certainly there but no one has looked for them and under the best of circumstances, they will be difficult to locate.

In fact, evidence for an extended occupation of the area is to be found in linguistics. Bergsland (1958, pp. 625-626) has noted traces of Indian influences on the Aleut language, even though the Aleuts and Indians are now separated by an extended area of Eskimo population. Hammerich (1960, p. 88) attempts to explain both the isolation of the language and its trace of Indian influence by suggesting that at some time in the past, probably 3,000 or 4,000 years ago, a common Eskimo-Aleut community was divided in two by a wedge of Indians moving into the Lake Iliamna area. These Indians pushed those who were to be the Aleuts westward along the Alaska Peninsula and onto the Aleutian chain. Later, but still a long time ago, Eskimos re-entered the Iliamna area and those adjacent to it, permanently separating Indians and Aleuts.

This hypothesis, based entirely on linguistic evidence, received support from extensive archaeological excavations recently carried out in the Naknek River region on the Alaska Peninsula. As a result of this work, Dumond (1969, p. 1114) has postulated that by 2500 B.C. the interior portion of the Alaska Peninsula northwest of the Aleutian Range was inhabited by an inland oriented people who were probably Indians. Around 1900 B.C. these people were displaced by a movement of ancestral Eskimos from the north bearing the so-called Arctic Small Tool tradition who by 1000 B.C. had moved out to the coast. By 200 B.C. the upper portion of the Naknek drainage had been re-inhabited by descendants of the Arctic Small Tool people and from that time continuity of population down to historic times can be demonstrated. Although it is risky to assume that prehistoric movements of people in the Nushagak River region paralleled exactly those in the Naknek drainage, it at least seems possible that such a pattern might apply to a wider area of southwestern Alaska. In that case, it should be possible to locate the settlements of these prehistoric peoples, particularly those who had repopulated the interior by 200 B.C., in the Nushagak River region.

DISTRIBUTION OF SETTLEMENTS

In order to assess the significance of environmental determinants of settlement patterns in the Nushagak River region, the data on settlement location from previous chapters will now be summarized. It should be kept in mind, however, that during the historic period factors other than environment were frequently of greater importance to the Eskimos when it came to selecting locations for their villages. These additional factors are intimately connected with changes brought about as a result of contact and they will be discussed in a later section of this chapter which emphasizes changing settlement patterns. At this point it can simply be stated that during the period under discussion it was only rarely that the location of a settlement was changed exclusively for environmental reasons.

Some indication has already been given in this chapter of the kind of locale that residents of the Nushagak River region found suitable for their settlements. The situation along the river is so consistent, however, that it seems worthwhile to deal with the matter in some detail. As previously noted, the Nushagak is the only major river in Alaska that has one stable bank for a consider-

able part of its total length. This presents one clear advantage from the standpoint of settlement location; the opportunity to construct a village where there is no danger of spring flooding. The Nushagak Eskimos utilized these favorable locations during the historic period and probably earlier. Of the 18 sites on the river that were seen, 12 are on the stable right bank, not including Dil-15 which is on a slough. Furthermore, all of these are situated where a small creek enters the river. These right bank settlements are consistently located on the sloping banks of such streams, often in a ravine or small valley formed by it. This suggests that in addition to protection from flooding, the availability of fresh water, as opposed to the somewhat muddy water of the main river, was important to the inhabitants. Other environmental factors that seem to have been important to the Eskimos in selecting a village site along the river include the presence of wood for building and fuel, an unobstructed view downriver (most structures are on the upriver side of creek valleys), and access to good hunting and fishing locations.

In spite of the real advantages of locating settlements on the right bank of the Nushagak, there were nevertheless five villages along the left bank. Three of these, however, are along the lower river where many of the advantages of the right bank are present. Elilikok (Dil-8) and Nunachuak (Dil-7), two fairly important middle river settlements, are located in low, flat areas whose only favorable aspects, seemingly, are good views down the river. Both are said to have been abandoned partly because of the damages inflicted by frequent spring flooding. Koliganek, abandoned in 1964 when the inhabitants moved to New Koliganek, has not been discussed in this study, but it too is located on the low left bank of the river. Informants stated that the major reason for establishing the settlement in that location around 1940 was the presence of good timber for building, and that the decision to abandon the spot was made because of frequent floods, both in the spring and during periods of unusual winter thaw (VanStone, 1967, pp. 143-144). It is thus apparent that occasionally the importance of a single environmental factor could result in the selection of village sites that, within a short time, would prove to be unsuitable.

There is little that can be added to what has been said concerning Eskimo occupation of the lower Mulchatna River. It has already been noted that Eskimo movement onto the river took place relatively late, perhaps not more than 50 or 60 years ago,

and that by 1940 or shortly thereafter, the three settlements had been abandoned. The impetus that brought about this brief penetration into an area that is very close to the Athapaskan boundary was probably almost exclusively an environmental one and may have been associated with a desire to exploit the hunting potential of this area. Factors responsible for the abandonment of the lower Mulchatna, however, are probably not environmental but related to economic changes influencing the entire Nushagak region.

Of all the areas of the Nushagak River region, the one in which environment played the least role in settlement distribution during the historic period is Nushagak Bay. This, of course, is due to the fact that the bay area was the center of economic development for the entire region, and communities grew and declined in response to these external factors. Nevertheless, the environment must have played some role, particularly in the location of older communities like Ekuk, Kanakanak, and Igushik. Fishing and sea mammal hunting formed the subsistence base for the people of Nushagak Bay and it seems likely that the older settlements were located with these activities in mind. The necessity of being close to a source of fresh water is even more important in this area than along the river and it is significant that creeks occur in the immediate vicinity of most of the sites along the bay. Those settlements located near the mouths of the Igushik, Snake, and Wood rivers were almost certainly so situated to take advantage of the seasonal runs of salmon up these rivers, both for commercial and subsistence purposes. Since there are no rivers entering the bay along its east shore, it is not surprising to find that Ekuk was the only settlement in that area that with certainty can be said to date back into the prehistoric period.

In examining settlement distribution on the Wood River, the most striking fact is that all the sites on the river are either at or near its mouth (Dil-26-28), or very close to the point where the river flows out of Lake Aleknagik (Dil-29-33). This arrangement is almost certainly associated with the taking of salmon. As noted previously, the Wood narrows considerably above the mouth of the Muklung River and also becomes shallower. Fish were doubtless much easier to take in this upriver area. Unfortunately, the extent to which Wood River settlements were occupied seasonally cannot be determined with certainty.

Settlements on the Lakes also appear to have been located with reference to good fishing locations. Here the pattern is clearer

than on any of the rivers. All the settlements are situated at one end or the other of the short stretches of water that connect the lakes. Here fish congregate in large numbers to spawn during the late summer. Because of the strong emphasis on fishing in this area, it is tempting to suggest that all the settlements were summer fish camps. But this is apparently not the case. At least three of the settlements are of substantial size. Tikchik (Dil-40) had two *kashgees* and it is probable that there were ceremonial houses at Agulowak (Dil-36) and Imiak and perhaps also Agulukpak (Dil-37). This would surely indicate that these settlements were occupied at least part of the time during the winter months when most of the ceremonies in the *kashgee* were held. It is thus apparent that there was a rather sizeable permanent population in the Lakes area during the nineteenth century practicing a more sedentary way of life than those living in river villages.

HOUSES AND COMMUNITY PATTERNS

Villages in the Nushagak River region were an irregular scattering of semi-subterranean houses having square or rectangular living rooms with tunnels opening off them. Although these tunnels could point in a variety of directions, they generally faced the river, lake, or bay. The typical Eskimo house of this area was constructed of spruce logs, although cottonwood and birch were sometimes used. The builders generally made an excavation in the ground slightly larger than the proposed house before the actual construction was begun.

In over-all plan the houses ranged from square to rectangular with hard-packed dirt floors and central fireplaces. Sleeping benches along the walls were characteristic of some structures and the roofs were almost always supported by four central posts. Roof beams were frequently covered with sheets of birch bark to form a waterproof protective cover over which sod and dirt was placed. There was a sky-light in the center of the roof to admit light and to allow smoke from the fire to be drawn out. As was the case with Eskimo houses everywhere, the entrance tunnels of those in the Nushagak River region had floors which were usually lower than the floors of the living areas, thus forming a trap for the cold air. Entryrooms or storm sheds opening off the tunnels were also a common feature.

The amount of variation that occurred in this type of house plan was not great and was usually confined to relatively minor

differences, such as the number of wall benches, horizontal or vertical logs in the tunnels, presence or absence of cribbed corners, etc. (VanStone, 1967, pp. 124-125; 1968b, pp. 233-252; 1970, pp. 20-33).

In many villages during the early historic period the focal point for community life was the *kashgee*, or men's house. It was always the largest structure in every village and the place where the men and boys spent most of their time. It was the center of religious observances and the place where many social obligations were fulfilled. Another characteristic of the *kashgee* was the absence of women and young girls. Females could enter the structure on errands and to bring food, but such visits were always brief and women played no part in the various *kashgee* activities.

In Nushagak area villages the *kashgee* was located near the physical center of the community or at the peripheries. These structures were similar in construction to the dwellings but much larger. The two *kashgees* at Tikchik and one at Akulivikchuk had deep center areas surrounded by benches on all four sides. This center section could be covered during ceremonies or opened to contain a fire and hot rocks when sweat baths were taken by the men (VanStone, 1967, pp. 125-126; 1968b, pp. 252-258; 1970, pp. 33-38).

Although *kashgees* must have been impressive structures in occupied settlements, they are sometimes difficult to distinguish from large houses once their roofs have collapsed and they have become filled with sod and overgrown with grass. Thus the exact number of villages with *kashgees* in the Nushagak River region cannot be determined with certainty. It is probable, however, that as many as eight of the Nushagak River villages had these structures and presumably at least six bay communities did too. On the river it was the old, long-established communities of Old Koliganek (Dil-4), Kokwok (Dil-16), Akulivikchuk (Dil-13), and Ekwok (Dil-12) where *kashgees* were found. There was also one at Elilakok, and possibly at Agivavik, Tunravik (Dil-10), and Nunachuak.

On Nushagak Bay it can be assumed that there were *kashgees* at Ekuk, Kanulik (NB-7), Igushik, Kanakanak, and Chogiung (Dil-25) and there definitely was one at Nushagak (NB-8) (VanStone, 1967, pp. 125-126). For the Mulchatna and Wood Rivers the situation is less clear. No *kashgees* were observed on either river, and with reference to Old Stuyahok (Dil-24) on the

Mulchatna, informants mentioned specifically that there had been no *kashgee* in that community. It is probable that the settlements on these rivers are too recent to have had these structures. In the Lakes area there probably was a *kashgee* at Imiak, the major settlement at the southeast end of Lake Aleknagik, and perhaps at Agulowak and Agulukpak, along with the two at Tikchik.

Since the *kashgee* played such an important part in the social life of the Nushagak Eskimos, it seems worthwhile to consider in some detail the decline of this institution and its effect on community patterning. It is no exaggeration that some of the most significant changes that took place in the region as a result of contact were those involving the *kashgee* and its associated activities. As Christianity began to replace the aboriginal system of supernatural beliefs, the ceremonial functions of the *kashgee* declined. Although both Moravian and Russian Orthodox services were first held in the *kashgees*, the missionaries of both denominations encouraged their new converts to build chapels. As early as 1878 Father Shishkin made the first reference to Orthodox chapels. Although he was not specific concerning their location, it seems safe to assume that at least one was on the Nushagak River and one or more in bay communities (DRHA, vol. 1, pp. 329, 331, 333). In 1882 there were 154 Orthodox converts at Kokwok, but there is no mention of a chapel (DRHA, vol. 2, p. 144). For the Moravians information is more specific and it has already been noted that chapels were constructed at Grant's Village (Dil-19) in 1896-1897 and at Kokwok the following year.

It is probable, therefore, that by 1900 chapels of either the Russian Orthodox or Moravian faith had been constructed at a number of settlements in the Nushagak River region. It also seems likely that many of the functions of the *kashgee* would have been undermined prior to this time, particularly the ceremonial functions. The *kashgee* as a workshop and lounging, sleeping and bathing place for the men would continue to be important for some time to come, but obviously once the ceremonial aspects of *kashgee* activities were diminished, the structure as an institution in Eskimo life would never be the same again. Informants maintain that the *kashgee* at Ekwok stood until 1938 and it is possible that the one at Old Koliganek survived almost as long or perhaps until the abandonment of that community about 1940.

The decline in importance of the *kashgee* in Nushagak region communities could have been one factor that encouraged the

proliferation of small villages throughout the area between 1880 and 1940. Although other factors, which will be discussed presently, were also involved, and although the residents of such communities may have retained their affiliation with *kashgees* in the larger settlements throughout the area, the fact that the *kashgee* as an institution was diminishing in importance may have made it at least conceivable that a small village could exist without one. The *kashgee* and its activities symbolized the large, closely knit community. With the collective ceremonies disappearing and growing interest in Christianity with its emphasis on individual salvation, many families may have seen no reason why they should continue to maintain residence in the larger settlements, particularly when there may have been compelling economic reasons for doing otherwise.

This fact emphasizes the significance of changes in the social organization of Eskimo communities throughout the region that were going on during the historic period and were related to the decline of the *kashgee* as a village social center. As the structure lost its essential meaning in the village and became little more than a lounging place for elderly men, the men and boys began to live in the houses that had previously been occupied by women only. Oswalt (1963, p. 149) has noted that on the Kuskokwim this meant that larger houses were built even though house form remained much the same as during the aboriginal period. With the men and boys leaving the *kashgee* to take up residence in the dwellings, it is certain that in the Nushagak area, too, large houses were the rule rather than the exception.

On the Kuskokwim, Moravian missionaries encouraged the Eskimos to build log houses and such dwellings were constructed as early as the last decade of the nineteenth century (Oswalt, 1963, p. 149). Although missionary pressure of this kind does not seem to have been as strong in the Nushagak region, the river Eskimos nevertheless had ample opportunity, particularly during their visits to the bay, to observe the white man's architecture. As noted previously, the Moravians at Carmel, like their counterparts at Bethel, encouraged the building of log houses.

Some of the abandoned settlements also show that the Eskimos went through a transitional stage in their shift from the traditional, semi-subterranean house to the above ground log house. This involved the construction of a log framework, either without excavation or with a very shallow one, which was then covered with sod. The entrance chamber of this type of house was wide and also un-

excavated; simply a large storm shed. When completed, these houses closely resembled the aboriginal type; this transitional house is also known from northwest Alaska (VanStone, 1962, p. 68). On Nushagak Bay cabins were built in the late nineteenth century and upriver in the first decade of the twentieth. It is probably impossible to date with any degree of certainty the various innovations that were taking place in the traditional, semi-subterranean house, but houses basically related to the traditional type were being built in both areas until the 1930's.

In the early years of the historic period the extended family was the basic residential unit throughout southwestern Alaska. As the contact period progressed, the Eskimo household was reduced in size to the point where nuclear family residence units became extremely common, eventually replacing the extended family. This shift in the residence pattern was doubtless due to multiple factors including missionary influence and involvement in trapping and wage labor. The change brought about a shift back to smaller dwellings, but this is probably reflected only in the cabin remains at some of the more recent sites in the region, and in the present-day community pattern.

CHANGING SETTLEMENT PATTERNS

Turning to a reconstruction of the historic settlement pattern, first consideration will be given to those sites on the Nuyakuk and Nushagak rivers. Figure 41 shows the estimated length of occupancy for each of the sites along these rivers based primarily on references in historic sources and information obtained from informants. It will be noted that between 1800 and 1860 there were, for certain, only three occupied sites with the possibility of four more. Those definitely inhabited at this time were Agivavik, Akulivikchuk, and Kokwok, all in the middle river area. It is also possible that the occupation of Old Koliganek goes back into this period as may such little known settlements as Ingrik (Tay-1), Manasuk (Dil-5), and Dil-15. The lower river was something of a mystery at this time. Information on Dil-21 and NB-1 is so slight that any estimate of their period of occupancy must, of necessity, be little more than a guess. On the basis of previously mentioned population estimates for the sites in question, it seems likely that the total number of inhabitants along the river between these dates was somewhere around 300 to 400, a figure that corresponds roughly

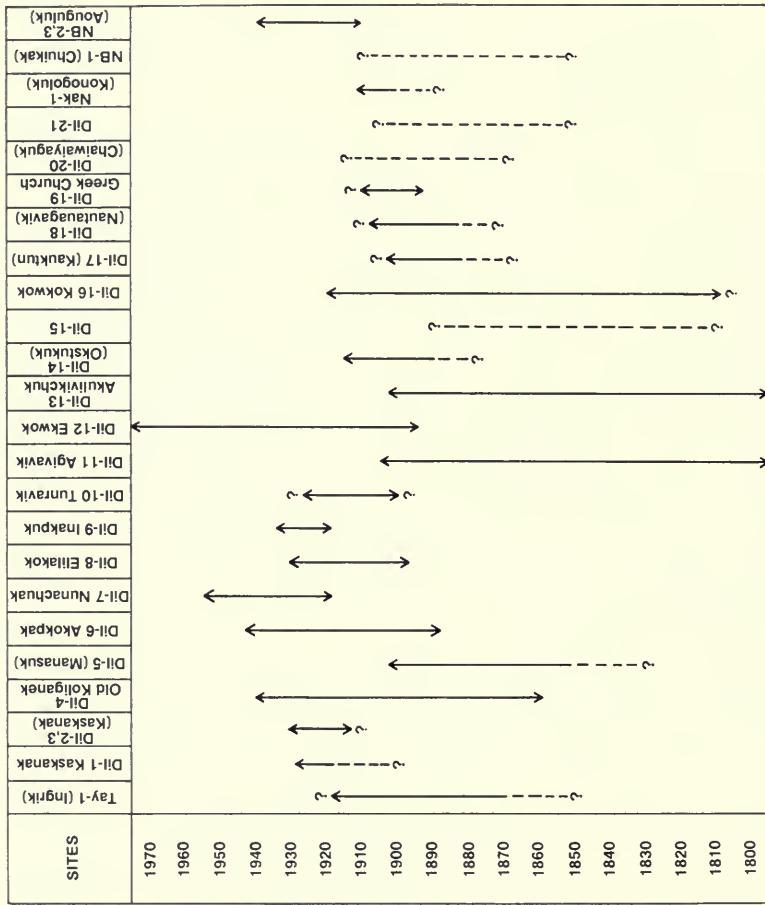


FIG. 41. Settlement chronology on the Nuyakuk and Nushagak rivers.

to the data obtained by Vasiliev in 1829 (quoted in Zagoskin, 1967, p. 308).

Between 1860 and 1890 a number of new settlements came into existence to replace, in degree of importance, earlier ones. The basic continuity of the population centers, however, was not greatly altered. Old Koliganek emerged as an important upriver settlement and in the middle river three new villages appeared; Akokpak (Dil-6), Elilikok, and Tunravik. It is doubtful if a total of more than 100 persons ever occupied these three settlements. In the Kokwok-Akulivikchuk area it is possible to note a considerable shift in population. Before the end of the period, Agivavik and Akulivikchuk were abandoned and Kokwok was in a decided decline. Ekwok was beginning to emerge as the major settlement for the middle river and it has continued to maintain this position down to the present time. It is interesting to note that Ekwok may have begun as a fish camp temporarily inhabited by people from Kokwok (Osgood, 1904, p. 18). If this was indeed the case, it indicates the manner in which some new settlements may have come into existence along the river and perhaps elsewhere in the area.

The occupation of the lower river between 1860 and 1900 is by no means clear. Figure 41 indicates that several small sites may have been occupied during this period but there is no definite evidence for this. Only at Greek Church (Dil-19) is it certain that there were residents before the end of the nineteenth century. It is doubtful if there were, during this period, more than 75 people living between Ekwok and the mouth of the river. A conservative population estimate for the entire river between 1860 and 1900 would be approximately 400 people.

Between 1900 and 1940 most of the villages mentioned in the preceding two paragraphs continued to exist, and this period may have seen a greater number of individual settlements along the river than at any other time in its history. Nunachuak and Inakpuk (Dil-9), probably a fish camp, were established, Tunravik was almost certainly abandoned, and Ekwok continued to grow in importance. All of the small settlements below Ekwok with the possible exception of Aouguluk (NB-2) and Nunauwalik (NB-3) were abandoned during this period and the major center of Kokwok, which had long since lost its important position, also died out. Old Koliganek and Akokpak had shrunk considerably in size and it is possible that in spite of the large number of settlements along

the river, the total population was smaller than at any other time during the historic period; this in spite of the fact that there was perhaps some movement onto the river from the Mulchatna. A conservative population estimate for the river between 1900 and 1940 would be from 250 to 350 people.

After 1940 the settlement pattern along the Nushagak and Nuyakuk rivers becomes much the same as it is today and this can be considered the beginning of the modern period. Old Koliganek was abandoned about that year and Koliganek established, to be moved in its turn in 1964. Nunachuak continued to be inhabited into the 1950's and New Stuyahok was founded by Mulchatna River people about 1940. Ekwok, although declining in size, is still an important center, but the river below this point, except for the growing village of Portage Creek established in 1963, is uninhabited. The population of the river in 1965 was approximately 375 persons.

As previously indicated, the Mulchatna River was occupied by Athapaskans until fairly recent times and there is some indication that the lower part of the river covered in this study was unoccupied during the early historic period. The total span of historical Eskimo occupancy of the river appears to fall between 1890 and 1940, almost the exact number of years during which the settlement of Old Stuyahok was occupied. It is tempting to suggest that the early inhabitants of this site were the first Eskimos on the river. Although little information is available concerning the occupation of Nauluktulik (Dil-23), it appears to have been occupied briefly during the early years of this century. Kananakpok (Dil-22), a sizeable settlement, belongs to the final 15 or 20 years of Eskimo occupancy along the Mulchatna.

Since Old Stuyahok appears to have grown slowly and the occupancy of Nauluktulik can only be surmised, it would seem that the largest Eskimo population on the Mulchatna occurred between 1920 and perhaps 1935. A reasonable estimate of the number of inhabitants at that time would be between 90 and 125. In the late nineteenth and early twentieth centuries, it is doubtful if the population ever exceeded 50 to 75. The lower river was abandoned about 1940 when the remaining inhabitants moved onto the Nushagak River.

With reference to Nushagak Bay (fig. 42), there were, at the time of earliest contact, at least three important settlements in the

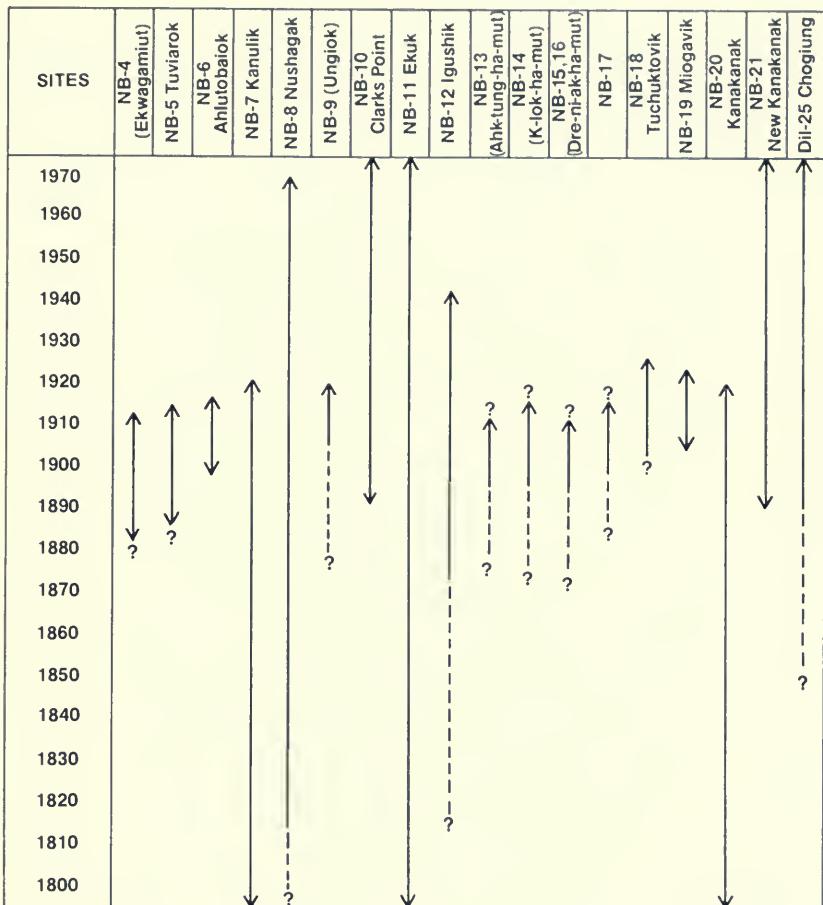


FIG. 42. Settlement chronology on Nushagak Bay.

area; Kanulik and Ekuk on the east side of the bay and Kanakanak on the west side. It is also possible that Igushik and Nushagak were occupied at that time. Some combination of these communities must have contained all or most of the population of the bay when the Russians first appeared. Vasiliev estimated a population of 500 for the bay area in 1829, but 13 years later Zagoskin believed the number to be roughly half that figure. A severe small-pox epidemic in 1836-1837 is thought to have been responsible for the difference (Zagoskin, 1967, p. 308).

It is probable that all these settlements began to grow after Aleksandrovski Redoubt was established in 1818 and Nushagak

probably attracted the greatest number of new inhabitants. These people came from interior regions of the Nushagak River region, from the Kuskokwim River, from coastal and interior points in between, and from the Alaska Peninsula. By 1860 there is every reason to believe that Tikhmenev's (1939-1940, pt. 2, p. 396) estimate of a population of 1,260 for the bay area may be only slightly high. This estimate, however, like others for the area, is unreliable because of the possibility that seasonal migrants were included (VanStone, 1967, pp. 112-114).

The establishment of a commercial salmon fishery in Nushagak Bay in 1884 had a profound effect on the population and the settlement pattern. Kanulik, of course, was strongly affected by the establishment of a cannery in its vicinity and the Moravian mission two years later, in 1886. Nushagak and Ekuk received canneries before the end of the century and the populations of Igushik, Kanakanak, and Chogjung were certainly affected by economic developments in their vicinity. Between 1880 and 1900 three small settlements (NB-4-6) grew up north of Kanulik and it is probable that all three arose in response to the commercial fishery. It is also likely that the small sites at the mouths of the Igushik and Snake rivers were related to fishing activities in that area as was the settlement at Clarks Point.

About 1890 two new communities came into existence on the west side of the bay; New Kanakanak-Bradford (NB-21) and Chogjung, later to be called Dillingham. It is significant that the only new communities of any importance to arise as a result of economic change were located on the west side of the bay, signifying the emergence of this area as the modern population center, while the east side rapidly declined in importance.

The years 1908-1910 can be considered a high point of the fishing industry in Nushagak Bay. There were at least ten canneries in operation at that time and it is likely that the permanent Eskimo population of the area was from 500 to 600 persons, a number greatly augmented during the summer months by imported oriental laborers, Eskimos from all over southwestern Alaska, and perhaps some Indians from the Iliamna Lake area.

The influenza epidemic of 1918-1919 had an even greater effect on the settlement pattern of Nushagak Bay than the fishing industry. Kanulik, which declined after the closing of its cannery in the early years of the century and the departure of the Moravians in 1906, was completely abandoned. So was Kanakanak and

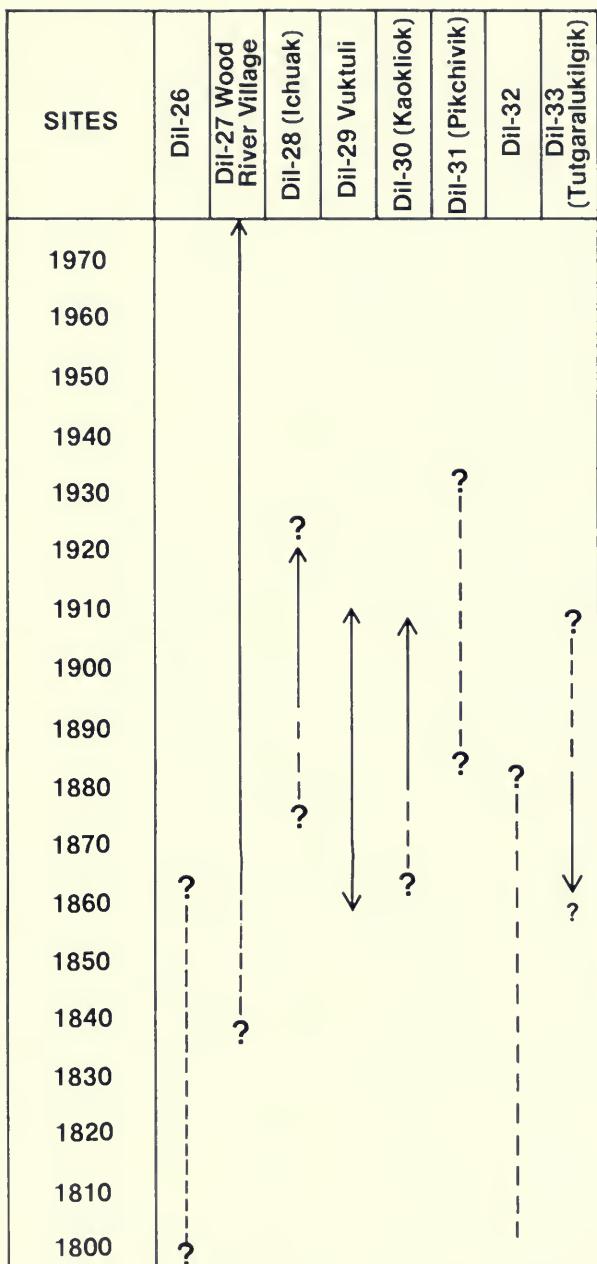


FIG. 43. Settlement chronology on the Wood River.

Igushik, both of which had already declined due to the establishment of new communities to the north. Nushagak and Ekuk were never completely abandoned, but the epidemic, together with the shift of economic activity to the west side of the bay, meant that they would not be important again. It is likely that in 1920 the permanent population of the bay did not exceed 350.

From 1920 to the present Ekuk, Nushagak, and Clarks Point have continued to be occupied, but it is the Dillingham-New Kanakanak area that has attracted most of the population. Official population figures are of dubious value, but it is certain that for the past decade the number of permanent, year-around residents of bay communities has not exceeded 500.

Reconstructing the settlement pattern for the Wood River is complicated by the fact that there are fewer references to these settlements in the sources than to those of any other part of the Nushagak River region. Of the eight sites on the river, only two can be dated with any degree of certainty and there are population estimates for only two. Nevertheless, it is at least possible to make a few general statements.

There are two sites (Dil-26, 32) on the river that may belong to the late prehistoric or early historic period (fig. 43). It is also possible that Wood River Village (Dil-27) was occupied at the time of initial contact. It seems clear, however, that the population remained low until the period between 1850 and 1880 when Wood River Village, Vuktuli (Dil-29), Tutgaralukilgik (Dil-33), and probably Ichuak (Dil-28) were inhabited. A reasonable population estimate for the river at that time might be 125, but probably not much more. The remaining sites on the river may have been occupied in the late nineteenth and early twentieth centuries, but this is not clear. Wood River Village presumably began to grow after a cannery was constructed there in 1901 and it may be that the Wood River had its heaviest population around the turn of the century, particularly during the summer months.

Like other areas of the Nushagak River region, the Wood River area was hard hit by the influenza epidemic of 1918-1919. After that fateful event, only Wood River Village continued to be occupied. Except for the two families living in that community, the Wood River at the present time is uninhabited.

In the Lakes area there are two sites likely to have been occupied when the Russians established their first foothold in southwestern Alaska in 1818. Both Imiak and Tikchik appear to date

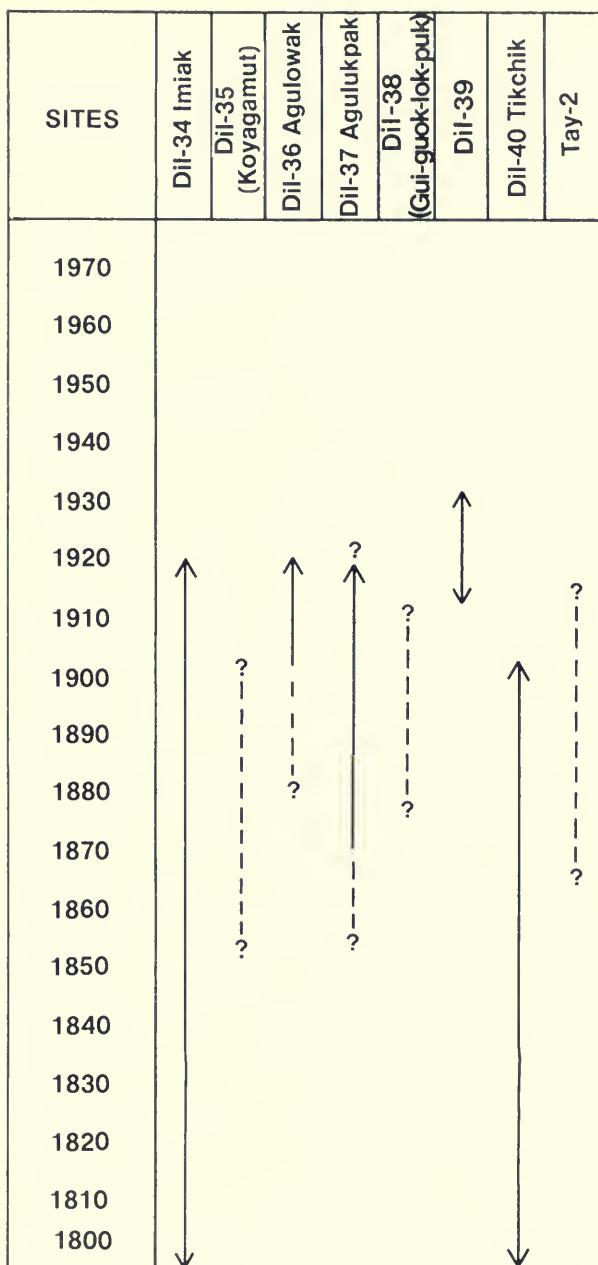


FIG. 44. Settlement chronology on the Wood River Lakes and Tikchik Lakes.

back at least to the beginning of the nineteenth century and these are the only settlements in the area for which reasonably certain details concerning occupancy exist (fig. 44). The total population for the Lakes area toward the middle of the nineteenth century might be estimated at about 150. Information on the period of occupancy for other sites in the area is limited, but it would appear that toward the end of the century Agulowak and Agulukpak were established and this may have been the period of heaviest population on the Lakes, with perhaps as many as 300 people inhabiting the four above-mentioned settlements.

As might be expected, the effects of the influenza epidemic were strongly felt in the area. Tikchik had been abandoned at the turn of the century as a result of an earlier epidemic, but Imiak, Agulowak, and Agulukpak all appear to have succumbed to the later concentrated period of illness that proved so devastating in other parts of the region. Although there was a winter camp at the mouth of the Tikchik River in the late 1920's, and possibly others in the area, the Eskimo population of the Lakes was virtually wiped out in 1918-1919 and people did not begin to move back into the area until the late 1920's when families from the Togiak region, the Kuskokwim River, and Nushagak Bay began to populate the shores of Lake Aleknagik (VanStone, 1967, pp. 155-156). The other lakes to the north have remained uninhabited to the present day, doubtless because of their remoteness from the centers of economic development on Nushagak Bay.

There is some reason to believe that the inhabitants of the Lakes were not Kiatagmiut as might be expected. The only population listing for Tikchik in the historic sources indicates that 31 "Kuskoquims" were living there in 1879 (Bailey, 1880, pp. 26-27). This suggests the possibility that all residents of the Lakes had come from the Kuskokwim and that they may have entered the area in the late prehistoric period at a time when it was uninhabited or virtually so. Although most Kuskokwim immigrants into the Nushagak region doubtless reached their new homes by way of the Bering Sea coast, some could just as easily have come into the area by way of the interior rivers and portages. The various routes between the middle Kuskokwim and the upper tributaries of the Nushagak must have been well known to the people of both areas long before the pioneer explorations of Vasiliev and other Russians opened this area to the fur trade (VanStone, 1968b, p. 345).

SETTLEMENT PATTERN DETERMINANTS—A SUMMARY

In an earlier section of this chapter the environmental determinants that affected settlement patterns in the Nushagak River region were noted. Here information concerning determinants related to the contacts between Eskimos and Europeans will be summarized. It has been noted that these were even more effective in bringing about changes in the way in which communities were distributed in the region during the period between 1800 and the present.

With reference to the Nushagak River region as a whole, two major aspects of historic contact brought about considerable change in the subsistence pattern of the Eskimos. First, the establishment of a trading post at the mouth of the river and the subsequent involvement of the Eskimos of the area in the fur trade; second, the beginning of the commercial salmon fishery in the late 1880's which gradually introduced people to a wage economy. Although involvement in the fur trade greatly affected the subsistence pattern, one must question whether it brought about a very great change in the settlement pattern. It has been noted that river villages were sedentary seasonal settlements and there is no reason to think that the shift to a trapping-trading economy changed this. People still spent the summer and part of the winter on the river. Trips to Nushagak were made in the late spring and perhaps in the winter as well. A trapping-trading economy may have reduced the actual amount of time which the Eskimos spent in their river villages, but not enough to cause a major shift in the settlement pattern. Thus throughout the contact period from its beginning to about 1880 there were well established communities on the upper and middle river, but little or no settlement on the lower river. It is the period between 1880 and 1940 that witnessed the proliferation of villages along the river and the more even spread of population, although basic concentrations on the upper and middle river continued to be important.

This trend toward proliferation cannot be interpreted with assurance, but it would seem to be tied in with the growing commercial fishing industry in some way. As a result of this economic development, there was a significant movement of peoples into the Nushagak River region from other parts of southwestern Alaska. Some of these new inhabitants moved upriver from the bay in order to carry out subsistence activities between fishing seasons and yet not be too far removed from the center of economic development on the

bay. For the same reason, residents of the older established settlements on the river may have found it convenient to live closer to the coast. It is also true that some of the small villages on the lower river were seasonal fishing camps established by the expanding population of Nushagak Bay.

There also is reason to believe that throughout the period between 1880 and 1940 the river villages were becoming more sedentary and less seasonal in their occupation. As the Eskimos became involved to a greater extent in the fishery, the less dependent they were on hunting and earnings from trapping.

After 1900 the number of villages on the river began to decline. The influenza epidemic of 1918-1919 sharply reduced the population and was responsible for the abandonment of some settlements. Although Orthodox chapels had been built in some communities before the turn of the century, churches did not become a factor for the coalescence of population until the 1920's. Later on the establishment of schools and government agencies was to have the same effect. As a result, after 1940 Koliganek (later New Koliganek), Ekwok, and New Stuyahok were the only villages on the river.

It is interesting to note that a basic continuity of population existed throughout the entire historic period in the middle and upriver regions in spite of the changes effected by the various external agencies already mentioned. In the upriver region this continuity is represented by the Koliganek villages and Tikchik, the latter appearing to have had closer relations with river settlements than with other villages in the Lakes region. Continuity along the middle river encompasses Akulivikchuk, Kokwok, and Ekwok. New Stuyahok, it will be recalled, was established about 1940 and is populated primarily by former Mulchatna River residents who moved off that river to be closer to economic developments in the bay.

With reference to Nushagak Bay, there is little that can be added to what already has been said concerning the factors affecting settlement patterns. It has been relatively easy to document the relationship between cannery locations and Eskimo settlements and some attention has also been given to the manner in which economic growth favored the west wide of the bay and how the settlements in this area, particularly New Kanakanak and Dillingham, grew at the expense of all other communities in the area. In fact, it is no exaggeration to say that since the beginning of the

contact period, the bay settlements have grown, declined, or disappeared almost exclusively as a result of external factors, whether it was the trading activities of the Russians and Americans at Nushagak, the building and abandonment of canneries, influences of the Russian Orthodox and Moravian churches, or the effects of introduced diseases. Here, perhaps better than anywhere else in the Nushagak River region, it is possible to see that Chang's (1958, p. 299) distinction between the cultural ecological factors that affect settlement patterns and the social interactional factors that bring about changes in community patterns are not always mutually exclusive. In Nushagak Bay the two kinds of factors combined to produce a marked effect on the settlement pattern. It should be remembered, however, that Chang's scheme was devised with aboriginal cultures in mind and not cultures affected by rapid and profound change.

Concerning the Mulchatna and Wood Rivers and the Lakes area, again it is not possible to add much to what has already been said. The Mulchatna, occupied in part by Eskimos relatively late in the historic period, was almost certainly depopulated in response to economic developments on Nushagak Bay. The same reason may also be advanced to explain why the Wood River and the Lakes were not extensively re-populated after the influenza epidemic. Only the southeastern end of Lake Aleknagik, with an access road to Dillingham, churches, and a school, has been able to attract a new and permanent population.

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Publication 1120